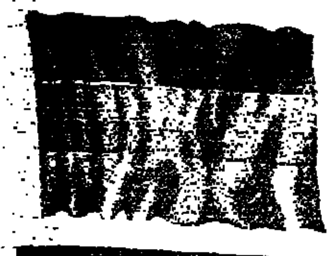
FINANCIAL TIMES



One Germany
A sweet and sour experience
Page 15

Robots at work
Japanese break with tradition
Page 12

Montreal
Suffering under a political cloud
Page 4

Today's survey
International communications
Separate sections

World Business Newspaper TUESDAY OCTOBER 3 1995 D8523A

OECD expects 10% growth in Russian economy next year

The Russian economy could grow by up to 10 per cent next year if the government continued to implement tough market reforms, the Organisation for Economic Co-operation and Development said in its first survey of the country. The OECD forecasts that Russia's economic output, which declined by 15 per cent last year, could stabilise this year and grow by as much as 10 per cent in 1996. Page 16

Hashimoto named Japan's deputy PM:

Ryutaro Hashimoto (left), president of Japan's dominant Liberal Democratic party, took a step closer to becoming the next premier by being offered the job of deputy prime minister. Prime minister, Tomiichi Murayama, agreed to confer the largely honorary title on Mr Hashimoto after the widely expected resignation of foreign minister Yohei Kono. Page 6

Figures show US growth: The US economy is rebounding but growth is unlikely to be rapid enough to put upward pressure on inflation, purchasing managers' figures indicated. Page 4

Yen moves cost Japan $13bn: The Bank of Japan spent nearly $13.47bn last month in its attempt to revive the stagnant economy by driving down the yen against the US dollar. Page 6

Republicans disagree on tax plans: Newt Gingrich and Bob Dole, the Republican leaders of the US House of Representatives and Senate respectively, are at odds over the magnitude of the tax cuts due to be passed within the next six weeks. Page 4

Mitsui and GEC in turbine deal: Mitsui Engineering and Shipbuilding of Japan has signed a technology licensing contract to produce steam turbines with GEC Alsthom, the Anglo-French power, transport and engineering group owned by Alcatel Alsthom of France and GEC of the UK. Page 16

Postbank, Germany's state-owned giro bank, launched its defence against a DM3.08bn ($2.1bn) hostile takeover bid from a consortium that includes Deutsche Post, the state-owned postal company, Deutsche Bank and Swiss Reinsurance. Page 17; Lex, Page 16

Argentina sets oil search rules: Argentina announced proposed rules for companies wishing to explore for oil in the South Atlantic, one day before the launch in London of the Falkland Islands government licensing round. Page 4

Sun International Hotels, the leisure and gaming group, announced a $250m joint venture with the Mohegans, a tribe of native American Indians, to build a casino and entertainment complex in Connecticut. Page 20

Latvian vote split three ways: Latvian voters divided their support in weekend parliamentary elections almost evenly among an anti-Russian populist outsider, the ruling centrist party and the main leftwing party. Page 2

Industrivärden, the Swedish investment group, spurned a SKr4.3bn ($621m) bid for its packaging subsidiary PLM from Ball Corporation of the US and decided to go ahead with a planned public offering to its own shareholders. Page 18

Austrian party averts budget crisis: Austria's People's party pulled back from threatening the collapse of the country's coalition government when it agreed to resume the drawn-out negotiations over the budget. Page 3

Kenyan dissident escapes gallows: A Kenyan magistrate convicted Koigi Wa Wamwere, the country's leading dissident, of robbery but cleared him of the firearms charges that would have sent him to the gallows. Page 7

Czech currency joins FT list: Following reforms of the Czech koruna which start today, the Financial Times' currency page will carry the daily price of the koruna against the dollar. **Currencies, Page 25**

Turkish quake kills 55: At least 55 people died in a strong earthquake in Dinar, south-west Turkey. At least 150 people were injured in the quake which measured 6.0 on the Richter scale.

Simpson jurors begin deliberations: Jurors in the murder trial of former US football star O.J. Simpson began their deliberations on whether he is guilty of killing his ex-wife Nicole Brown Simpson and Ron Goldman last year.

■ STOCK MARKET INDICES

New York lunchtime		
Dow Jones Ind Av	4,771.74	(-17.34)
NASDAQ Composite	1,038.62	(-4.92)
Europe and Far East		
CAC40	1,780.71	(-7.64)
DAX	2,205.02	(+17.98)
FT-SE 100	3,520.2	(+12.0)
Nikkei	17,739.84	(-173.22)

■ US LUNCHTIME RATES

Federal Funds	5 13/16%
3-mth Treas Bills: Yld	5.365%
Long Bond	105 7/16
Yield	6.447%

■ OTHER RATES

UK: 3-mo Interbank	6 3/4%	(6 25/32%)
UK: 10 yr Gilt	103 1/8	(102 17/32)
France: 10 yr OAT	101.99	(101.79)
Germany: 10 yr Bund	102.05	(101.78)
Japan: 10 yr JGB	114.394	(114.154)

■ NORTH SEA OIL (Argus)

Brent 15-day (Nov)	$16.15 1/2	(16.21)

■ GOLD

New York Comex		
(Dec)	$384.8	(386.5)
London:		
close	$382.2	(383.75)

■ DOLLAR

New York lunchtime		
£	1.5895	
DM	1.42825	
FFr	4.9255	
SFr	1.149	
Y	100.595	
London:		
£	1.5871	(1.5827)
DM	1.4299	(1.423)
FFr	4.929	(4.9102)
SFr	1.1501	(1.149)
Y	100.585	(98.65)

■ STERLING

DM	2.2693	(2.2521)
Tokyo close:	Y 100.40	

Austria	Sch35	Greece	Dr400	Malta	Lm0.60	Qatar	QR13.00
Bahrain	Din1.250	Hong Kong	HK$20	Morocco	MDh15	S.Arabia	SR11
Belgium	BFr70	Hungary	Ft215	Neth	Fl 4.25	Singapore	S$4.30
Bulgaria	Lv110.00	Iceland	IKr220	Nigeria	Naira90	Slovak Rp	Sk60
Cyprus	C£1.10	India	Rs75	Norway	NKr18.00	S. Africa	R12.00
Czech Rp	Kc55	Israel	Shk7.90	Oman	OR1.50	Spain	Pta250
Denmark	DKr17	Italy	L3000	Pakistan	Rs40	Sweden	SKr17
Egypt	E£5.00	Japan	Y500	Philippines	Pso50	Switz	SFr3.60
Estonia	EKr 20	Jordan	JD1.50	Poland	Zl 4.20	Syria	S£50.00
Finland	FM15	Kuwait	Fils.625	Portugal (m'land)	Es230	Tunisia	Din1.500
France	FFr11.00	Lebanon	US$1.50			Turkey	L55,000
Germany	DM3.80	Lux	LFr70			UAE	Dh12.00

Bank accused of 'unsound practices' after $1bn loss at New York branch

US orders crackdown on Daiwa

By Maggie Urry in New York

The US authorities severely curtailed Daiwa Bank's activities in the US yesterday, accusing it of "unsafe and unsound practices" after last week's revelation of a $1.1bn loss at the bank's New York branch.

The Federal Reserve Board, the US central bank, and the New York State Banking Department jointly charged the Japanese bank and its New York branch with violating banking laws and regulations. The charges reveal that the bank was told to tighten up its controls in 1992 and 1993, but apparently failed to do so.

Mr Toshihide Iguchi, a trader in US government securities at Daiwa Bank's New York branch, was charged last Tuesday in connection with the losses, which accumulated over 11 years. He is accused of having sold bonds held by the bank and its customers in order to conceal losses sustained on trading, and then to have falsified records to cover up the sales.

Daiwa Bank, which had no comment yesterday, was accused of failing to inform the regulators of the possible criminal activity in a timely manner. Although Mr Iguchi confessed to Daiwa's head office in Japan in July, the US authorities were not informed until September 18.

Banking regulations required Daiwa to inform the supervisors within 30 days of discovering the activity. The authorities said Daiwa "may have knowingly submitted ... a misleading and inaccurate report of the branch's condition as of June 30 1995".

Under an immediate "cease and desist" order, the bank will have to cut its trading to the minimum required to service customers and manage the risks associated with its current trading positions. It will also have to submit detailed reports to the authorities about its internal controls, appoint outside auditors, and refile all the regulatory reports back to 1984, the year when the alleged fraud began.

The temporary order will be reviewed at a hearing on December 27. The hearing will be in public unless Daiwa can persuade the authorities this would be against the public interest.

In a document outlining the charges against Daiwa, the US authorities particularly criticised the bank for allowing Mr Iguchi to be responsible both for trading bonds and for custody of the securities – the so-called front and back office operations.

In the charges, the Fed and the New York State Banking Department said the supervisors criticised internal controls at Daiwa Bank's New York branch in November 1992 and November 1993.

On the latter occasion, the supervisors were "led to believe" that Mr Iguchi was "no longer responsible" for both front and back office activities. Yesterday's charges said the Fed now had "cause to believe" that the bank failed to make the changes.

Under the temporary order, Daiwa Bank and its New York branch have 30 days to submit a report on the actions taken by them between the time they learned of the losses and the date they notified the US authorities.

They also have five days to submit a written plan for the orderly reduction of the branch's trading activities. Daiwa may not do this by shifting business to its other US branches and it must give daily written reports of its trading activity.

EU states divided on closer ties with N America

By Lionel Barber in Luxembourg

A French-led group of states yesterday blocked an EU initiative to strengthen political and economic ties with North America.

EU foreign ministers meeting in Luxembourg failed to give the go-ahead for a joint study with the US on the creation of a transatlantic free trade area, despite strong support for the idea from Britain, Germany, the Scandinavian states and the European Commission.

The failure to win over a French-led bloc, which is more reticent about the principle of free trade, could jeopardise hopes for an ambitious programme to revitalise the transatlantic alliance, in time for agreement at the EU summit in Madrid in December.

The Spanish presidency has made efforts to promote a new vision for transatlantic relations, and was hoping to agree a programme before President Bill Clinton's visit to Europe in December.

Although the 15 broadly endorsed a paper put forward by Sir Leon Brittan, EU trade commissioner, views differed on free trade and tariff liberalisation with the US, Canada and Mexico.

Sir Leon sought to play down the difficulties, arguing that some EU members feared, wrongly, that the proposal for tariff reductions foreshadowed the launch of a new Gatt trade round. "A joint study does not imply a free trade area," he added. "It is a genuinely open study looking at its implications for a multilateral trading system."

Other diplomats noted, however, that the proposal for a free trade area had mixed support in Washington. The State Department is much more enthusiastic about it, while the US trade representative's office is worried about negative reaction in Congress.

Mr Klaus Kinkel, German foreign minister, did not hide his disappointment at the failure to reach agreement yesterday. He urged EU partners to support strengthening relations with the

Continued on Page 16

Tenneco to buy Mobil plastics division for $1.2bn

By Laurie Morse in Chicago

Tenneco, the US industrial group, yesterday fulfilled a year-old promise to make a major acquisition in the packaging industry, saying it would buy Mobil Corporation's plastics division for $1.27bn.

The speciality packaging company will become part of Tenneco's Packaging Corporation of America, with the deal expected to be completed before the year-end. The addition of Mobil Plastics will make PCA the fourth largest packaging company in the US, and one of the largest in the world.

During the first six months of this year, the Mobil unit had operating income of $51m on sales of $545m. In the same period, PCA earned $244m on sales of $1.3bn. The acquisition is expected to add $1.5bn to Tenneco's sales by 2000.

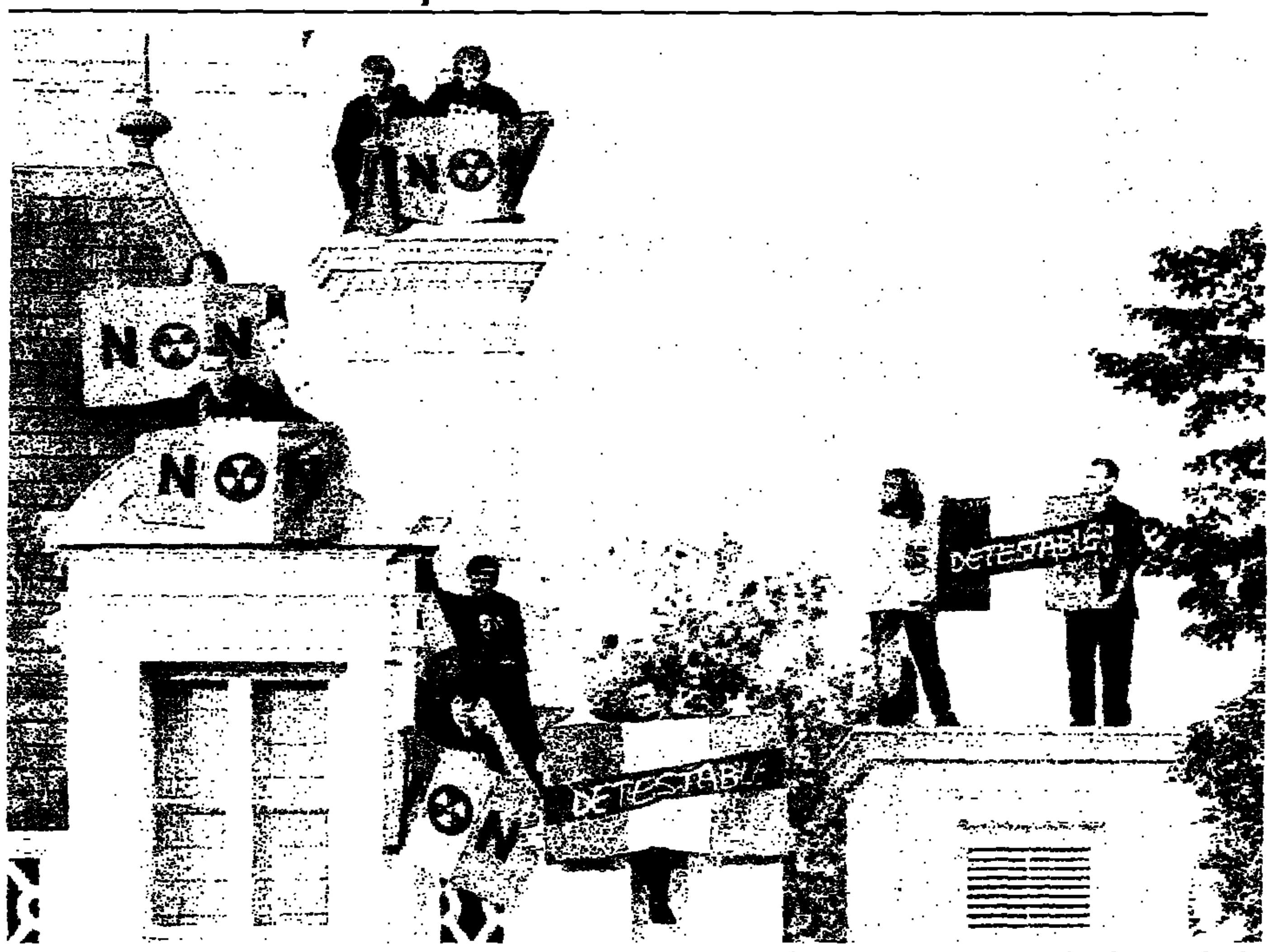
The packaging purchase is the largest redeployment of capital by Tenneco since it began a major restructuring programme more than two years ago. Tenneco sold its UK-based Albright and Wilson chemicals subsidiary, and spun off all but 21 per cent of Case Corporation, the Wisconsin-based equipment manufacturer which had been Tenneco's largest subsidiary. Those disposals netted more than $1bn and put Tenneco in search of high-growth, non-cyclical reinvestments.

During the past 15 months, Tenneco has made about $1bn in smaller acquisitions and reinvestments in the three areas it has identified as growth platforms: packaging, automotive parts, and natural gas transport and marketing. Mr Dana Mead, Tenneco's chairman, called the Mobil Plastics purchase "the largest and most important acquisition Tenneco has made in its major redeployment of assets." He also hinted Tenneco had not completed its shopping spree and that it hoped to make a major purchase in the automotive parts industry before year-end.

Tenneco plans to pay $500m in cash for Mobil Plastics, and finance the balance of the deal, about $770m, through long-term debt in the commercial paper market.

Mobil Plastics, which has also undergone major restructuring in the past two years, is based in Rochester, New York, and has 4,100 employees at 120 facilities in the US. It manufactures and markets well-known brands such as "Hefty" trash bags and "Baggies" food storage bags, produces containers for the take-out food industry, and also markets commercial packaging. Its businesses are less cyclical than PCA's commodity packaging operations. Although Mobil Plastics is mainly a North American company, Mr Mead said its products were suited for expansion into East Asia and Latin and Central American markets.

Fresh wave of protests over French N-tests



Greenpeace activists occupying the roof of the French ambassador's residence in London yesterday as part of a series of protests by the environmental pressure group after the French carried out a second nuclear test in the south Pacific. Report, Page 6
Picture: Reuter

Hanson in talks to create integrated UK power company

By David Wighton in London

Hanson, the industrial conglomerate, is moving to create a third large, integrated electricity company in England and Wales alongside National Power and PowerGen. It is negotiating to buy three power stations for more than £1bn ($1.5bn) to add to Eastern Group, the regional electricity company it bought for £2.5bn last month.

National Power yesterday confirmed that Eastern was one of three companies it had invited to make final offers for three of its power stations, accounting for more than a quarter of its output.

The announcement came as National Power unveiled its £2.8bn agreed bid for Southern Electric, the biggest of the 12 UK regional electricity companies (recs) still independent.

PowerGen, National Power's smaller rival, made a £1.9bn recommended bid last month for another of the recs, Midlands Electricity, and announced the sale of two power stations to Eastern for £400m.

If the Midlands and Southern bids succeed and Eastern wins the National Power auction, the electricity industry in England and Wales would be transformed by the creation of three integrated companies with almost 60 per cent of the generation market and 30 per cent of distribution.

These moves partly reverse the separation of generation from supply and distribution ahead of privatisation. However, the distribution businesses which own the wires connected to customers will remain "ring-fenced" from the generating arms of the same groups, preventing abuse of local monopolies.

If either of the other two bidders for the National Power stations – US energy groups Enron and Applied Energy Services – were successful, it would become the third largest generator, excluding British Energy, the nuclear operator.

Eastern's planned acquisition of the two PowerGen stations would increase its share of the power generation market in England and Wales to between 6 and 8 per cent. If Eastern, the largest of the recs, were to buy the three National Power stations, its share could rise to an estimated 14 per cent.

National Power estimates its share will fall to between 20 per cent and 25 per cent next year

Continued on Page 16
Wave of UK electricity bids grows, Page 17; Lex, Page 16

CONTENTS

No 32,796 Week No 32† LONDON · LEEDS · PARIS · FRANKFURT · STOCKHOLM · NEW YORK · LOS ANGELES · TOKYO

Anti-Russian Siegerists share parliamentary seats with leftwing and centrist parties

Outsider takes third of Latvians' votes

By Chrystia Freeland in Moscow

In a bizarre and unexpected result, Latvian voters divided their support in weekend parliamentary elections almost evenly among an anti-Russian populist outsider, the ruling centrist party and the main leftwing party.

Published yesterday, the results of the weekend elections suggest turbulent days ahead for the small Baltic state as politicians try to piece together a coalition government out of the disparate parliament.

The biggest surprise was the strong support for the People's Movement for Latvia, known as the Siegerist party after its leader Mr Joachim Siegerist, a 48 year-old who has spent most of his life in Germany and speaks only halting Latvian. Mr Siegerist's party won 16 seats in the 100-member legislature, just two seats less than the leftwing Democratic party and one seat less than Latvia's Way, the centrist party which leads the coalition government that has ruled Latvia since 1993.

The unexpected support for Mr Siegerist, who comes from a small town on the Danish-German border and moved to Latvia only four years ago, mirrors the popularity of populist political outsiders in other post-communist countries. In the 1990 Polish presidential elections, Mr Stanislaw Tyminski, a Polish émigré to Canada, upset expectations by winning more than a quarter of the vote.

Mr Siegerist's party played on the anti-Russian and anti-communist themes which are popular with a significant portion of the Latvian electorate, but the unconventional politician also employed unusual vote-winning strategies. He runs a charitable centre in Riga, the Latvian capital, which distributes free medicines to needy pensioners.

Politicians from more mainstream parties warned that Mr Siegerist's strong showing would introduce a wild card into Latvian politics

"It is very dangerous for democracy if many votes are gained by parties which are newly formed because there is no continuity or stability," said Mr Gundars Berzinsh, a member of the Farmers Union, the minority partner in the previous coalition government.

Mr Ziedonis Cevers, leader of the front-running, leftwing Democratic party, said it was impossible to define the Siegerist party because "it pledges both capitalism and socialism, a western orientation and an eastern orientation".

Mr Siegerist's strong showing is also likely to inflame the passions of Latvia's ethnic Russian minority. Russians make up a third of the country's population, but strict citizenship laws mean many of them do not have citizenship or the right to vote. Mr Siegerist claims Latvian citizenship through his father, a Latvian soldier who served in the German army.

The leftist Democratic party also did better than expected, running on a platform diametrically opposed to that of the Siegerists. The party benefited from popular discontent with the country's painful transition to a market economy, which it has pledged to soften. Mr Cevers, the party leader, also yesterday stepped up his call for a relaxation of the country's citizenship laws to make it easier for Russians to qualify.

Airtel is first rival for Spanish telecoms giant

By Tom Burns in Madrid

Two men in hard hats walk away from a construction site at the end of a day's work and one, as he reaches for his mobile, says "at last we can choose". The television advertisement is selling a new cellular phone service but as the camera pans to horizons, sunrises and rainbows, it is also delivering a message about choice to a Spanish public reared on monopoly services.

The service, called Airtel, is a private sector GSM (Global System for Mobile Communications) network that gained its licence after a hotly contested bidding process at the end of last year. It is being launched today to compete with Telefónica, Spain's partly privatised telecommunications giant that has the Finance Ministry as its largest single shareholder.

Airtel's chairman, Mr Eduardo Serra, says that with the development "Spaniards have gained a new liberty". It is also a freedom that Spaniards have had to wait for, in part to protect Telefónica's home market – Spain is gaining a GSM service up to three years later than its European partners.

It is estimated that the 700,000 mobile phone users in Spain who currently use the inferior analogue system that is provided by Telefónica will grow – thanks to the new digital technology – by 24 per cent annually over the next 10 years to total more than 6m.

Cracks in Telefónica's monopoly began to appear two years ago when the government deregulated the domestic data processing sector. For the wider public, telecommunications choice starts with the launch of Airtel.

> Telefónica has already had to cut tariffs and announce plans for Internet links

The new GSM service represents the biggest liberalisation step before the total deregulation of the domestic sector in 1998, when the government plans to award a licence to a second basic telephony operator.

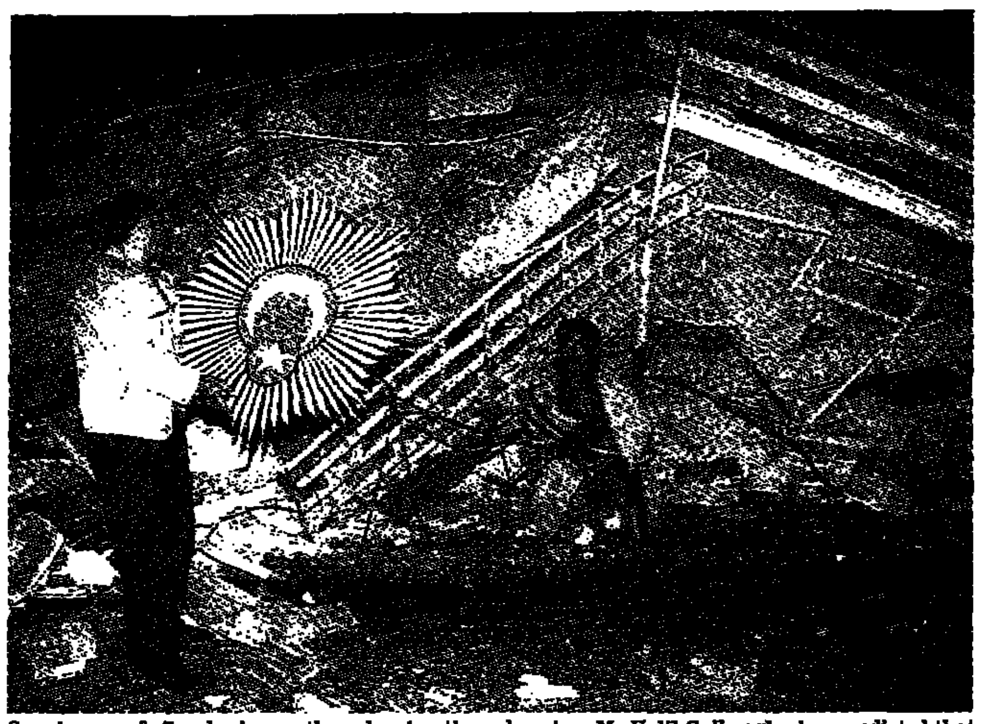
What the domestic public has already gained is competitive prices. Telefónica, which launched its own GSM service in July, has reduced its mobile tariff charges in the past week in order to bring them into line with the cheaper service that Airtel plans to introduce.

In addition, Telefónica has stolen a further march on Airtel by announcing that it will hook its GSM clients into the Internet before the end of the year. The cyberspace possibilities had been one of the sales pitches planned by its private sector rival.

Telefónica also starts with powerful advantages. It has a well-developed digital system that offers, at present, 80 per cent coverage of the population, compared to Airtel's 35-50 per cent and strong sales and distribution networks.

The upshot is that Airtel's blow for freedom of choice could prove a costlier challenge than expected. The company, which counts major domestic banks as well as AirTouch of the US and BT among its shareholders, paid Pta85bn ($680m) to obtain its licence and has already spent Pta120bn out of an overall investment of Pta250bn.

"Our rule of thumb is that the GSM market will be split 50-50 between Telefónica and Airtel," says Luis Prota a telecoms analyst a AB Asesores, the big Madrid securities house. "But in the short term Telefónica is likely to have a 70 per cent quota of the market and it should be able to hold on to its lead."



Survivors of Sunday's earthquake in the south-western Turkish town of Dinar search through a collapsed building. The death toll yesterday rose to 42 and 200 other people were reported injured, Reuter reports. The minister of housing, Mr Halil Culhaoglu, has predicted that the final death total could be around 100.

News agencies reported that 4,000 houses had been destroyed and 1,000 others damaged in the quake. Picture: Reuter

France may issue bonds to cut social security deficit

By Andrew Jack in Paris

The French government is considering launching an issue of government bonds to try to reduce the social security deficit to zero over the next two years.

Mr Jean Arthuis, economics minister, said on French radio a new bond issue was "probable" next year, while stressing that a final decision had not yet been taken.

He warned that the 1995 budget was short by FFr30bn-35bn on projections made for receipts in late 1994, but stressed his commitment to ensuring that the deficit for the year would not exceed FFr322.6bn ($63.5bn). He said he had already frozen FFr10bn in credits pledged and more would need to follow.

In an interview in the French press yesterday, Mr Arthuis also said that any reform to the country's pension fund system would not come before reform to the existing systems of social security and welfare contributions.

He criticised the tendency of the French always to expect tax breaks to accompany any types of investment in which they placed money, reflecting his decision in the 1996 budget last month to clamp down on fiscal benefits for those paying life assurance premiums.

The government is considering a loan in order to achieve the objective of Mr Alain Juppé, the prime minister, to cut the social security deficit from its projected level of FFr60bn at the end of this year to FFr30bn next year and zero by the end of 1997.

The reduction is part of wide-ranging efforts to introduce tighter financial discipline so France can meet its objective to cut the budget deficit to 3 per cent of GDP by 1997, as part of the Maastricht criteria for monetary union.

However, the pledges have been met until now with some scepticism by the analysts and the financial markets. The Organisation of Economic Co-operation and Development pointed out in a report late last month that France had in the past exceeded its target for the budget deficit.

In further indications of the difficulties the government will face in attempting to cut public spending, Mr Marc Blondel, head of Force Ouvrière, one of the leading trade unions, yesterday criticised the idea of new bonds to cut the social security deficit.

He said the system should not be made more fragile through the additional interest that the loans would demand. Force Ouvrière is among the unions organising a strike in the civil service and public sector companies scheduled for October 10.

Russians harvesting the bitter fruits of reform

By John Lloyd in St Petersburg

Russia's success in fighting inflation and stabilising its economy is now bearing fruit – but much of it is bitter. The relatively tough discipline exerted by the Ministry of Finance and the Central Bank is forcing into the open crises masked or delayed by the stop-go nature of previous reforms, and by the high inflation and lack of regulation that has been the mark of Russian economic policy.

A conference of Russian and foreign researchers brought together in the Russian European Centre for Economic Policy (RECEP) in St Petersburg last weekend highlighted a range of issues now causing or about to cause serious upheavals in the economy and in society. Though unavoidable if success is to be consolidated, their appearance at a pre-election period will further strengthen the attraction of those forces which argue that reform has so far been both chaotic and cruel.

Unemployment, for long thought to be uniquely low among economies in transition, is now growing fast and in some areas is huge. Figures from a new survey by the state agency Goskomstat show a national level of 7.7 per cent – with a further 6 per cent hidden.

The most recent research shows that unemployment, open and hidden, is more than 30 per cent in one-fifth of Russia's regions – and in a few crisis regions, such as Ivanovo and Vladimir in central Russia, it is more than 50 per cent.

Russia's banks, still shaky from recent shocks, are likely to get worse before they improve. A study for RECEP by professors Daniel Cohen and Gael de Pontbriand highlights the dependence of the banks on arbitrage and other forms of income derived from a high-inflation environment.

It also shows that the best enterprises have weaned themselves from dependence on banks, leaving the banks' debt portfolios skewed towards the poorer enterprises most likely to default.

Prof de Pontbriand said the widespread use of promissory notes, largely unregulated by the central bank, also posed a threat to the banks of widespread inability to repay. He said: "The tighter regime now being followed deprives the banks of many of the sources of income they developed in inflationary times, and forces them towards areas in which they should be working but where they are weak."

Russian enterprises have in the process of privatisation become greatly undervalued. Research by Mr Dirk Willer and Mr Roland Nash shows the top 200 companies to have, in June 1995, a market capitalisation of $22bn – slightly less than Daimler Benz.

The undervaluing, according to Mr Nash, stems largely from a perception that shareholders have few and unenforceable rights, and from a fear that the government's efforts to stabilise the economy will fail.

However, there are already some successes. In research on inter-enterprise debt – once thought to threaten the very viability of Russian enterprises – Mr Peter Oppenheimer says the problem is no longer one affecting the whole economy, but is concentrated in certain unprofitable sectors, and is tending to decrease even there.

Professor Charles Wyplosz, now attempting to construct a macro-economic model for the economy, said that it was now tending to shed its dependence on dollars as the rouble remains stable and is seen as a more reliable store of value.

Finally, the success of anti-inflationary strategies is helping the poor. A paper by Mrs Brigitte Granville and Ms Judith Schapiro shows that every 1 percentage point off the annual rate of inflation takes 0.5 per cent of the poor above the poverty level.

Slovenes consider becoming eastern Swiss

Tension with Italy has reduced the appeal of EU membership, but perhaps Switzerland offers a model

EU looking east

Slovenia has made such economic progress since the break-up of Yugoslavia that the coalition government of Dr Janez Drnovsek says it deserves to be among the first wave of east European countries to join the European Union. But the tortuous process of reaching an association agreement with the Union has led to disillusionment and calls for Slovenia to become a second Switzerland.

With GDP per capita of $7,000 in 1994, Slovenia is eastern Europe's most developed country and has resolved almost all the economic problems it inherited after breaking away from Yugoslavia in June 1991. Inflation has been cut to 11 per cent, foreign debt service absorbs a mere 5 per cent of export earnings and the economy grew 5.5 per cent in 1994.

Indeed, if this economic growth continues, living standards in Slovenia should pass both Greek and Portuguese levels by the end of the decade. By the time Slovenia joins the EU, there could be at least six poorer members competing for funds.

Membership would boost exports for a country that already sells two-thirds of its exports to the EU; and with the UN arms embargo hampering attempts to build up its armed forces, membership would also bring a feeling of security to a country lying uncomfortably close to the war in former Yugoslavia.

Yet a growing number of Slovenians question the wisdom of heading for EU membership, even if no mainstream political party articulates this view. Many people yearn instead for the country to play a role in Europe similar to Switzerland's: open to trade but aloof when it comes to diluting the country's culture or selling assets to foreigners.

But what has enraged public opinion in Slovenia, and led the government to tone down much of its pro-EU rhetoric, has been a bitter dispute with neighbouring Italy over the rights of Italians whose property was confiscated after the second world war.

Although Yugoslavia had agreed in two treaties signed in 1975 and 1983 to provide cash compensation, in 1994 the Berlusconi government declared this was no longer acceptable. It called for the property itself to be returned and blocked the opening of negotiations on Slovenia's association agreement with the EU until March this year.

Although Slovenia has now agreed to amend provisions in its constitution banning foreign ownership of real estate, the incident has not just soured Ljubljana's relations with Italy. It has also shattered its somewhat romantic view of the EU, as Dr Drnovsek indicated in late August in a speech at the European Forum in Alpbach, Austria: "Italy has now reopened issues which belong in history ... the Italian demands have aroused the feeling that in fact not much has changed in Europe. In Slovenia we realised with considerable surprise that the EU is in fact far from some ideal democratic association such as we imagined in the past.

"We realised within it there is a continuous bargaining, often entirely without principle, of interests."

Slovenia's association agreement was agreed in principle in June but will not be signed until parliament approves the amendment to the constitution. The trade agreement will come into force on January 1 1996, superseding an EU co-operation agreement that Slovenia agreed in 1993.

While most east European countries have been given six years to open their markets to competition, in its association agreement Slovenia will lower barriers for most industries within three to four years. This will be a big test for the country's industry, which has began the process of restructuring but is still not yet privatised.

Unlike several other east European countries, Slovenia has not yet formally applied for full EU membership, although the government regards this as the logical consequence of its planned association agreement despite the short-term intensity of the dispute with Italy.

Indeed, the fact that the country is overwhelmingly a manufacturing economy strengthens the case for full membership, as many of the country's key industries, such as pharmaceuticals and wood products, are directly affected by EU legislation. Dr Benjamin Lukman, director of Slovenia's Office for European Affairs, says: "We would be able to influence decisions about questions such as ecology, transport and communications."

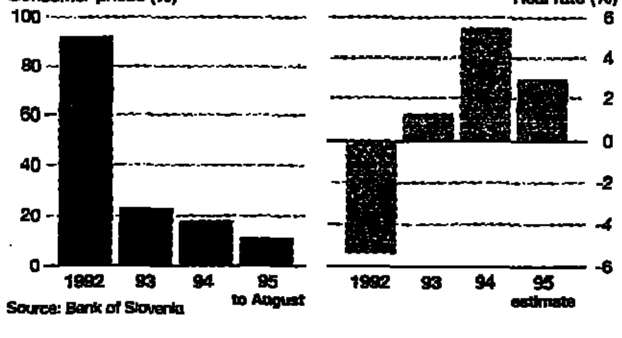
Unlike most east European countries, Slovenia is unlikely to face adjustment problems in agriculture, which accounts for only 5 per cent of GDP. What could delay the country's accession to the EU, according to one foreign diplomat, is the state of government institutions. With only four years as an independent state, Slovenia has had to build up the institutions of a nation almost from scratch and it is only recently that the government has started refining their role.

Dr Lukman, whose office in the Foreign Ministry was established only in March 1995, admits that there needs to be more co-ordination and awareness of the EU within the government. "Each ministry should have its own department looking at European affairs," he says.

Gavin Gray

Previous articles in this series appeared on July 10 and 19, August 2, 9 and 15 and September 13 and 22

Slovenia: getting ready for the EU



Source: Bank of Slovenia

EUROPEAN NEWS DIGEST

EU agrees code on openness

EU foreign ministers yesterday agreed to a new code which would lift the veil of secrecy surrounding the Union's law-making procedures, despite Danish objections that the measures did not go far enough.

The code will restrict the power of the Council of Ministers, the EU's decision-making body, to keep secret minutes of meetings and to add unpublished amendments to laws. Under the new code, the release of minutes will still be at the discretion of the Council, but it should ensure the widest possible availability, save in exceptional circumstances.

The measures agreed yesterday mark the most serious effort to date by the Council of Ministers to respond to public criticism that the EU law-making process is secretive and undemocratic. It follows presssure from Denmark, the Netherlands, the European Parliament, and latterly Sweden and the UK to open up procedures. *Lionel Barber, Luxembourg*

Editorial Comment, page 15

Budget leak angers Olso

The Norwegian government is refusing to comment on newspaper reports leaking details of the 1996 budget to be unveiled tomorrow. The leaks have been so extensive that the government has asked police to investigate how the newspaper Dagbladet managed to obtain a copy of a document containing the main features of the draft budget. The ministry said it looked seriously on Dagbladet's article in which "extensive information on the state budget" was published.

Dagbladet said the draft put state expenses at NKr363.2bn ($57.7bn) and revenue at NKr373.8bn after a rise in offshore energy profits, and said the surplus, NKr10.6bn, would be put aside in the State Petroleum Fund. It said the proposed budget constituted a real growth of 0.5 per cent over the 1995 budget, for which a deficit of NKr8.6bn was fixed. *Reuter, Oslo*

Bank hits at Hungary's taxes

Hungary's tax policies are unstable and contradictory and its heavy tax burden must be reduced to support economic growth, according to a new World Bank study. Payroll taxes are extremely high, discouraging employment and leading to evasion, the study says. Employers in Hungary pay social security contributions of nearly 50 per cent compared with about 31 per cent in western Europe and 26 per cent in the Czech Republic.

The bank says recent tax increases, needed to cover large and growing public expenditure, are "self-defeating" because they lead to less compliance and reduce the incentive to save and invest of those who comply. High taxes contributed to a "hostile" environment for private-sector development while recent revenue strategies, involving frequent changes, were "short-sighted" and created uncertainty. Above all, the government needs to reform spending if the tax burden is to be reduced substantially. *Virginia Marsh, Budapest*

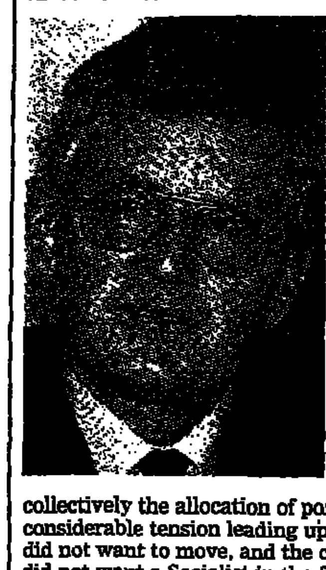
UN claims Croatian atrocities

UN officials said yesterday that 10 elderly Croatian Serbs were murdered in a village captured by Croatian army troops and warned that Croatia is conducting a systematic campaign of killing and looting against Serbs.

The claim is the most recent in scores of allegations that Croatian troops committed, and are continuing to commit, atrocities against the Serbs who remained in Croatia after the government launched "Operation Storm" in August. Just 2,000 Serbs – out of 150,000-strong community – have remained in their homes after Zagreb over-ran the self-styled Serb state of Krajina.

"Eight weeks after the Croatian army took control of the Serbian Krajina, widespread reports and observations document a systematic campaign of arson, killing and looting," said Mr Alun Roberts, the UN spokesman based in Knin, the centre of captured Serb Krajina. "This will open the box – where all the dirty laundry is hidden," said another UN official, speaking on condition of anonymity. "This is a big cover-up. Helicopters were used to take out the bodies which would have to mean the army was involved." The Croatian government so far has denied complicity in the numerous crimes, including the torching of up to 60 per cent of houses owned by Serbs. *Laura Silber, Zagreb*

Swiss finance minister named



Mr Kaspar Villiger (left) has become Switzerland's finance minister following a cabinet shuffle on Sunday that saw three portfolios change hands. Mr Villiger's former portfolio, defence, has been taken over by Mr Adolf Ogi, the transport and energy minister, and the transport ministry by Mr Moritz Leuenberger. Mr Leuenberger, a Socialist from Zurich, was elected by parliament to the cabinet last Wednesday following the retirement of Mr Otto Stich, the former finance minister and also a Socialist. Under Swiss practice, the seven-person cabinet decides collectively the allocation of portfolios. There was considerable tension leading up to the shuffle because Mr Ogi did not want to move, and the conservative and liberal parties did not want a Socialist in the finance ministry again or in the defence department. Mr Ogi ultimately gave way, he said, to preserve cabinet unity.

Mr Villiger, a businessman who managed his family's cigar and bicycle company until joining the cabinet in 1989, won universal respect for designing and implementing a radical restructuring of Switzerland's militia army. As finance minister, he is expected to continue to put the emphasis on deficit reduction. The federal government's deficit is budgeted to reach SFr6.5bn ($5.4bn) his year. *Ian Rodger, Zurich*

Volgograd returns Communists

The central Russian city of Volgograd overwhelmingly supported Communists in municipal elections held over the weekend in a further sign of public discontent with the national government.

According to unofficial reports, the Communists have won between 20 and 22 seats in the 24-member Volgograd city council.

Analysts have interpreted the results as the latest indication that the current government is heading for a serious defeat in December's parliamentary elections. The Volgograd vote appears to confirm the pro-Communist, anti-Yeltsin trend suggested by opinion polls and other regional ballots. In a gubernatorial race in the Urals this summer, Mr Eduard Rossel, an long-standing critic of Russian President Boris Yeltsin, beat the Moscow-backed incumbent.

Observers attribute the growing popularity of communists and hardline nationalists sometimes allied with them to widespread discontent with the painful side-effects of Russia's shift to a market economy. *Chrystia Freeland, Moscow*

Dalmine management reinstated

An Italian court has reinstated senior management at Dalmine, the state-controlled Italian steel company which is the subject of an investigation into allegations of false billing. The court in Bergamo, near Dalmine's headquarters in northern Italy, revoked an order issued by prosecuting magistrates in August, which suspended Mr Sergio Noce, the chief executive, and Mr Carlo Jachia, marketing director, from office. Their lawyers argued that the order was unjustified because the two directors were not involved in alleged false invoicing. *Andrew Hill, Milan*

NEWS: EUROPE

Portugal hopes for Socialist stability

By David White in Lisbon

Portugal's decisive swing to the Socialist party (PS) in Sunday's general election probably had as much to do with fears of instability as with the choice of policies on offer. Many voters appear simply to have opted for the party they thought most likely to win.

A photograph in the Portuguese daily Público in the last days of the campaign expressed the apparent fickleness of much of the middle-of-the-road electorate. A man at a fruit-stand was wearing an apron with a Socialist party slogan, holding in one hand a flag with the symbols of the centre-right Social Democrat party (PSD) and in the other a bunch of bananas. The caption described him as an "undecided" voter.

At least a fifth of the Portuguese electorate changed sides from the last general election four years ago, when the PSD government of Mr Aníbal Cavaco Silva won a second consecutive majority. When Mr Cavaco Silva decided to stand down this time, he may well have calculated that another majority was out of reach. His withdrawal – presumably to give him a clear run in the contest for the presidency next year – only compounded the damage done to the PSD government by recession and corruption scandals.

The Socialist victory was bigger than most observers expected. The party is expected to increase its number of seats by more than half to 112, just four short of an overall majority in the 230-member parliament. For once, the result vindicated the opinion polls, which in 1991 underestimated the PSD's performance.

Almost 20 years after getting a new democratic constitution, Portugal seems to have settled into a system in which the two main parties of centre-right and centre-left can alternate in power without trauma.

Newspapers of all persuasions agreed yesterday that a new cycle had begun. The country has put behind it the Cavaco Silva era of unprecedented stability. After the 1974 revolution no government had lasted a full term; Mr Cavaco Silva's did it twice.

At the same time the Socialist party, modernised and committed to free-market policies, including privatisation, has proved there is life after Mr Mário Soares, its founding father. Mr Soares served twice as prime minister before dropping his party role to become president almost 10 years ago.

Unexpectedly, the Socialists won more seats than the PSD and the conservative Popular party together. This crucially affects the prospects for Mr António Guterres's minority government, which will not have to seek support from the hardline Communists to outvote the combined forces of the right.

The government's programme – which under Portugal's painfully slow investiture procedure is not due for debate until early next month – is expected to be nodded through.

A 1996 budget, largely following the lines inherited from the outgoing government, is also thought likely to be passed without mishap. However, a crunch could come a year from now with the budget for 1997, when the government has to hit a deficit target of 3 per cent of GDP if Portugal is to qualify for the European single currency in 1999.

Outlining hopes for "a new political culture" Mr Guterres has appealed for help from opposition parties and has promised to listen to them. "Change does not mean destroy," he said after his victory was confirmed. Opinion surveys showed most Portuguese favouring a majority government, wary of returning to an era of instability.

Among business leaders and investors, party preferences were less important than having a stable government.

Financial markets reacted positively, although not ecstatically, to the result. Lisbon's stock index rose 0.6 per cent yesterday to 1,275.07, and the escudo was slightly firmer against the D-Mark.

The Socialists came first in all but eight of 20 electoral districts on the mainland and islands.

Four years ago, they led in none. The PSD, meanwhile, saw its support fall from almost 3m to 2m, while the Popular party pipped the Communists for third place.

Mr Guterres, although falling short of a majority, appears to have got across his message that the Socialists were the only party with a chance of obtaining one.

PORTUGUESE ELECTION

	Percentage of vote		Seats	
	1995*	1991	1995*	1991
Socialist party	43.9	29.1	112	72
PSD (centre-right)	34.0	50.6	88	135
CDS/PP (conservative)	9.1	4.4	15	5
CDU (Communist-led)	8.6	8.8	15	17
Others			0	1

*Latest projections

Guterres promises to be a priestly PM

By Peter Wise in Lisbon

In place of a police outrider, a television reporter perched on the pillion of a powerful motorcycle pulled alongside Mr António Guterres's limousine as he sped to a rally marking his triumph in Sunday's general election.

As the mobile interviewer dangled a microphone through the car's rear window, the Socialist (PS) leader coolly maintained his poise, speaking with aplomb of his heavy responsibilities as Portugal's future prime minister.

He has travelled a long way in a short time. Only months ago, the 46-year-old Mr Guterres, who has never held a government post and has led his party for little more than three years, was prone to lose some of his assurance in public – despite being an expressive speaker with a gift for improvisation.

On one occasion, which he describes as an invaluable lesson, he made the mistake of attempting unsuccessfully to calculate 6 per cent of GDP on television. As an honours graduate in electrical engineering, it was his experience not his mental arithmetic that was in question.

But in a country that emerged from dictatorship only 21 years ago and that has been dominated for the past decade by Mr Aníbal Cavaco Silva, the outgoing prime minister, politicians are predominantly young and untried in office.

Opponents have gently mocked Mr Guterres's claim to be on close terms with six European prime ministers as gauche. But his energetic leadership of the opposition and vice-presidency of the Socialist International make it difficult to describe him as "an illustrious unknown", the label once attached to Mr Cavaco Silva.

Mr Guterres's triumph is likely to be an encouragement for Mr Tony Blair, the leader of Britain's Labour party. In opposition to centre-right governments, both leaders have sought to bring their parties behind free-market, pro-European policies, while promising more concern for the poor and excluded.

In Mr Guterres, the PS, which once rallied to the symbol of a clenched fist but now uses a pink rose, has found a leader who embodies the aspirations of a younger generation of Socialists. The party believes that higher social spending and a caring state are not incompatible with fiscal discipline and privatisation. His test will be to make that programme work.

His social concern is rooted in religious belief. He is a practising Catholic who, after social work in shanty towns as a youth, chose politics rather than the priesthood as a way of helping the under-privileged.

For all his fluency, Mr Guterres sees himself as an accomplished listener – a quality perhaps reflected in his love of opera. "Winning an election does not mean you are always right," he said yesterday. "Others' opinions must always be taken into consideration."

Opponents say an expected search for consensus on government policy is likely to hamper Mr Guterres's decision-making capacity. But Sunday's vote shows that most Portuguese voters were clearly looking for someone with a sympathetic ear for their problems. He now has to show that he also has the solutions.

Prime minister-elect António Guterres yesterday pledged to listen to the views of opponents Reuter

THE FINANCIAL TIMES
Published by The Financial Times (Europe) GmbH, Nibelungenplatz 3, 60318 Frankfurt am Main, Germany. Telephone ++49 69 156 850. Fax ++49 69 596 4481. Telex 416193. Represented in Frankfurt by J. Walter Brand, Wilhelm J. Brüssel, Colin A. Kennard as Geschäftsführer and in London by David C.M. Bell, Chairman, and Alan C. Miller, Deputy Chairman. Shareholders of the Financial Times (Europe) GmbH are: The Financial Times (Europe) Ltd, London and F.T. (Germany Advertising) Ltd, London. Shareholder of the above mentioned two companies is: The Financial Times Limited, Number One Southwark Bridge, London SE1 9HL.
GERMANY:
Responsible for Advertising: Colin A. Kennard. Printer: DVM Druck-Vertrieb und Marketing GmbH, Admiral-Rosendahl-Strasse 3a, 63263 Neu-Isenburg (owned by Hürriyet International). ISSN 0174 7363. Responsible Editor: Richard Lambert, c/o The Financial Times Limited, Number One Southwark Bridge, London SE1 9HL.
FRANCE:
Publishing Director: D. Good, 168 Rue de Rivoli, F-75044 Paris Cedex 01. Telephone (01) 4297 0621. Fax (01) 4297 0629. Printer: S.A. Nord Eclair, 15/21 Rue de Caire, F-59100 Roubaix Cedex 1. Editor: Richard Lambert. ISSN 1148-2753. Commission Paritaire No 67808D
SWEDEN:
Responsible Publisher: Hugh Carnegy 468 618 6088. Printer: AB Kvällstidningen Expressen, PO Box 6007, S-550 06, Jönköping.

Editor: Richard Lambert, c/o The Financial Times Limited, Number One Southwark Bridge, London SE1 9HL.
F

Austria again tries to solve budget crisis

By Eric Frey in Vienna

The Austrian People's party yesterday pulled back from threatening the collapse of the country's coalition government when it agreed to resume the drawn-out negotiations over the budget.

The government was endangered last week when the Social Democrats (SPOe) and the conservative People's party (OeVP) failed to meet their self-proclaimed deadline to complete the 1996 budget by Sunday night.

But yesterday the party chairman, Mr Wolfgang Schüssel, said he wanted to continue the budget negotiations later this week. The finance minister, Mr Andreas Staribacher of the Social Democrat party, is scheduled to present the budget in the parliament on October 18.

The deadline set by the constitution is October 22, 10 weeks before the start of the new fiscal year. A breakdown of the budget process would shake the financial markets' confidence in the schilling, which is pegged to the D-Mark.

Budget negotiations have often been tough and the stringent convergence criteria for European economic and monetary union have made agreement even more difficult.

But veterans of previous budget battles say that they have never seen such discord and even dislike between the two main parties which have dominated Austrian politics since 1945.

The main source of friction is the desire of the OeVP to use the austerity measures required by the Maastricht treaty to tackle the system of social security benefits.

In particular, the OeVP wants to reduce early retirement by imposing a "penalty tax" on pensioners below the age of 60, to cut some unemployment benefits and to impose higher charges for hospital treatment.

The SPOe regards these proposals as a brutal assault on its key constituencies. The budget presented by Mr Staribacher relies primarily on higher taxes and receipts from privatisation to narrow the 1996 fiscal deficit to Sch93bn (£6bn) from Sch104bn this year.

Mr Schüssel has rejected these proposals and at one point even took a paper by Mr Staribacher and tore it apart in front of the cameras.

Mr Schüssel and his economics minister, Mr Johannes Ditz, also publicly questioned the validity of Mr Staribacher's budget data. They may have a point.

Mr Staribacher insisted for weeks that only Sch30bn in additional funds was necessary to reach the target, but later had to admit that the gap was actually closer to Sch50bn.

Mr Staribacher's shaky performance is an embarrassment for Chancellor Mr Franz Vranitzky, who plucked the young tax accountant from obscurity early this year and put him in charge of the budget process.

Though the SPOe party congress yesterday re-elected Mr Vranitzky as chairman – with 91 per cent of votes – he is under growing criticism from within his party. SPOe slumped to a post-war low of 35 per cent at the elections a year ago and is now hovering around 30 per cent in some opinion polls.

In contrast, the OeVP has seen its prospects improve since Mr Schüssel took over from his predecessor, Mr Erhard Busek, six months ago.

Mr Schüssel has caught up with Mr Vranitzky in popularity and observers say he may want to risk the chance of new elections to become chancellor himself.

But the main winner in new elections is likely to be the right-wing Freedom party of Mr Jörg Haider.

His party has capitalised on the squabbles in the government, and on public discontent with the established political structures, to rise to almost 30 per cent in the latest opinion polls.

Dole and Gingrich differ over tax cuts

By Jurek Martin in Washington

The Republican leaders of the House and Senate are at odds over the magnitude of the tax cuts due to be passed within the next six weeks.

In weekend interviews, Senator Bob Dole, the majority leader, and Congressman Newt Gingrich, Speaker of the House, reflected the divergent views of their chambers.

Mr Dole said he was "not certain at this point" whether the tax cuts would reach the $245bn previously agreed between House and Senate. But Mr Gingrich, countering that it was "virtually impossible" that a smaller tax cut would be accepted in the House, called on the Senate to live up to the bargain.

The Speaker took some potshots at the Republican Senate leaders, including Mr Dole, and said that it was inconceivable that House members would "walk away" from the Contract with America platform on which they were elected last year.

The majority leader's caution on tax cuts reflects the reservations of several senior Republican senators not normally classified as party moderates. They include Senators

Stating his intention: Bob Dole

Al D'Amatao of New York, Orrin Hatch of Utah, Alan Simpson of Wyoming and Pete Domenici of New Mexico.

However, as a presidential candidate, Mr Dole may also be concerned about the impact of the Clinton administration's campaign which argues that cuts in the Medicare and Medicaid health programmes for the elderly and poor are explicitly designed to make possible a tax cut for better-off Americans.

In his regular weekend radio broadcast, President Bill Clinton rammed home this charge, adding that the Republican plan for Medicaid meant that older and poorer Americans could find their meagre personal assets seized to pay for nursing home care.

Senator Tom Daschle, the minority leader, was equally blunt, saying, "To pay for a tax cut for the wealthy out of a pool of resources for Medicare is wrong."

Congress is in recess this week and members will doubtless use the break to go home and assess the shifting sands of public opinion on reforms of the Medicare and Medicaid programmes. The Republicans intend to cut a total of $450bn from the projected budgets of both during the next seven years.

The Congressional Budget Office analysis of the Medicare blueprint found it was possible to achieve most of the planned savings, but that the overwhelming costs would be borne by individuals paying higher premiums and other costs and by reduced payments to those providing medical care.

Montreal fights independence claims

Bernard Simon examines the dangers of division facing one of North America's great cities

With its European ambience, long history and modern amenities, Montreal can justify claims to be one of North America's great cities.

How then, does one explain that there are more vacant newly built homes in Montreal than the entire neighbouring province of Ontario; that the 178-year-old Bank of Montreal has moved its executive offices to Toronto; and that some international airlines have recently halted service to the world's biggest French-speaking city after Paris?

No single cause or event can be blamed. But most Montrealers would agree that uncertainty about Quebec's future in Canada has not done their city much good.

Montreal's business leaders are crossing their fingers that the political clouds will lift after October 30, when Quebec holds an independence referendum. Opinion polls – including several published over the weekend – point to a comfortable victory for the No side.

A strong No vote is assured in Montreal. More than a quarter of the metropolitan's 3.2m residents are either descendants of English-speaking families or recent immigrants.

As Quebec's commercial centre, the city would suffer most heavily from a breakaway. A steady exodus of companies and talent, mostly to Toronto, has taken place since Quebec's first separatist government was elected in 1976. A French-only language law, passed in the late 1970s, helped drive away thousands.

Some of Canada's best-known companies, such as Canadian Pacific, Alcan Aluminium, Royal Bank of Canada, Bank of Montreal and BCE, still maintain their head offices in the shadow of Mont Royal. But as an executive at one of these companies puts it, "Their commitment to Montreal is not what it used to be."

Politics cannot be blamed alone. Montreal's industrial base has been eroded by the closure of oil refineries, petrochemical and steel plants, and textile factories. The growing importance of trade across the Pacific has drawn traffic away from the St Lawrence River.

Heavy job losses among relatively old workers with little education have led to a degree of poverty and decay found in few other Canadian cities. While Montreal has a smaller population than Toronto, it has almost 14 per cent more unemployment insurance claimants.

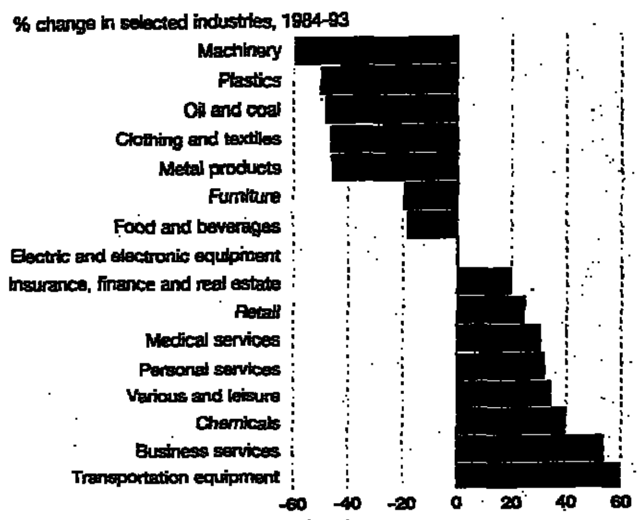
The picture is not altogether gloomy. Montreal has made the most of its assets. The fur trade, which gave the city its start as a commercial centre in the early 18th century, has given way to a flourishing fashion and design industry.

The ability to conduct business in French has proved to be an asset rather than a liability for many companies. With many French-speaking workers and graduates choosing to remain within their own milieu, labour turnover is low.

Some 40 per cent of the MBA students at McGill University speak three or more languages, and another 20 per cent are bilingual. According to Ms Sylvie Mercier, a commissioner at the Montreal Urban Community's economic development office, potential investors used to enquire at length about the differences between French and English-speaking Canada. Now "they hardly raise the issue," Ms Mercier says.

Meanwhile, generous government incentives and a plentiful supply of graduates from the city's four universities have sown the seeds for a blossoming high-technology sector, based mainly on computer software and pharmaceuticals.

Greater Montreal: change in employment



Source: Human Resources Development Canada

Political concerns have not prevented several foreign companies expanding their presence. Ericsson, the Swedish telecommunications equipment maker, chose Montreal three years ago as the research and design centre for all cellular phone software using North American standards. Ericsson's Montreal-based workforce has ballooned from 30 to 750 in the past decade.

Rolls-Royce, the UK aircraft engine maker, and Merck Frosst and Astra Pharma, two multinational pharmaceutical groups, are among other foreign companies that have built new facilities in recent years.

Mr Lionel Hurtubise, chairman of Ericsson's Canadian subsidiary, says that "Montreal is a good halfway house between Stockholm and Dallas (where Ericsson also has a large operation)."

According to Mr Hurtubise, "If Quebec did separate, we'd have a serious issue." But he doubts that will happen. For the time being, he concludes, remaining in Montreal has "very little downside". In fact, the federal government is said to be toying with a plan to try and revive the city's fortunes – provided the federalist camp wins the referendum.

Manufacturing survey shows US economic growth

By Michael Prowse in Washington

The US economy is rebounding but growth is unlikely to be rapid enough to put upward pressure on inflation, figures indicated yesterday.

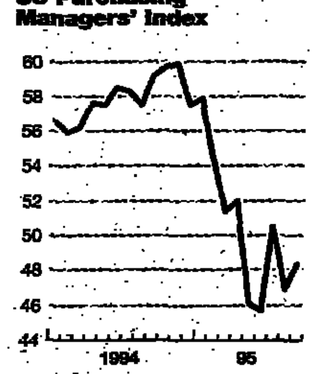
The purchasing managers' index – a guide to the health of manufacturing industry – rose to 48.3 per. cent last month against 46.9 per cent in August. However, it remained below the 50 per cent level predicted by many economists – the level widely regarded as marking the threshold for growth in the sector.

Separately, the Commerce Department reported flat personal incomes in August. Consumer spending rose 0.8 per cent in real terms from July – more than expected. However, data for July was revised down to show a decline of 0.3 per cent. Growth of consumption is expected to be constrained in coming months by the low savings rate.

Construction spending was also weaker than expected, falling 0.2 per cent in August after a robust increase in July.

The purchasing survey indicated that manufacturing industry has not yet recovered fully from its troubles earlier this year when excessive levels of inventories prompted cuts in production and employment. The index has been below the 50 per cent threshold for growth in four of the past five months.

US Purchasing Managers' Index



Source: Datastream

Components of the overall index painted a mixed picture. Indices for production and new orders edged above 50 per cent, indicating sluggish growth. However, the employment index continued to signal a contraction of the manufacturing workforce. The index for new export orders fell from 54.7 per cent to 52.9 per cent, the lowest level in two years.

The inflation outlook, however, remained encouraging. "Only 14 per cent of purchasing executives reported higher prices in September," said Mr Ralph Kauffman, a spokesman for purchasing managers. This was the lowest proportion since December 1992.

Argentina plans Falkland oil tax

By David Pilling in Buenos Aires

Argentina yesterday announced proposed rules for companies wishing to explore for oil in the South Atlantic, one day before the launch in London of the Falkland Islands government licensing round.

Although Argentina has no power to auction blocks in waters around the Falkland Islands, which are controlled by Britain, Buenos Aires said yesterday it intended to charge companies a levy of up to 3 per cent of any oil revenues.

It would also collect an exploration fee based on the size of individual blocks, foreign ministry officials told more than 40 Argentina-based oil companies yesterday.

Although Britain and Argentina signed an oil co-operation agreement in New York last week, they failed to resolve the issue of royalties, the collection of which impinges on sovereignty. Instead they reached a tacit agreement enabling each country to collect fees, while officially denying the right of the other side to do so.

If the Falkland Islands government round establishes a 9 per cent royalty, as expected, the deal would effectively provide for a 75:25 division of revenues in Falkland waters.

Mr Guillermo González, Argentina's principal negotiator in oil talks with Britain, spelled out the position of Buenos Aires yesterday. "The Republic of Argentina does not recognise the right of the UK to organise a licensing round... However, if Argentine companies want to participate in a round that we do not recognise, that is a business decision," he said.

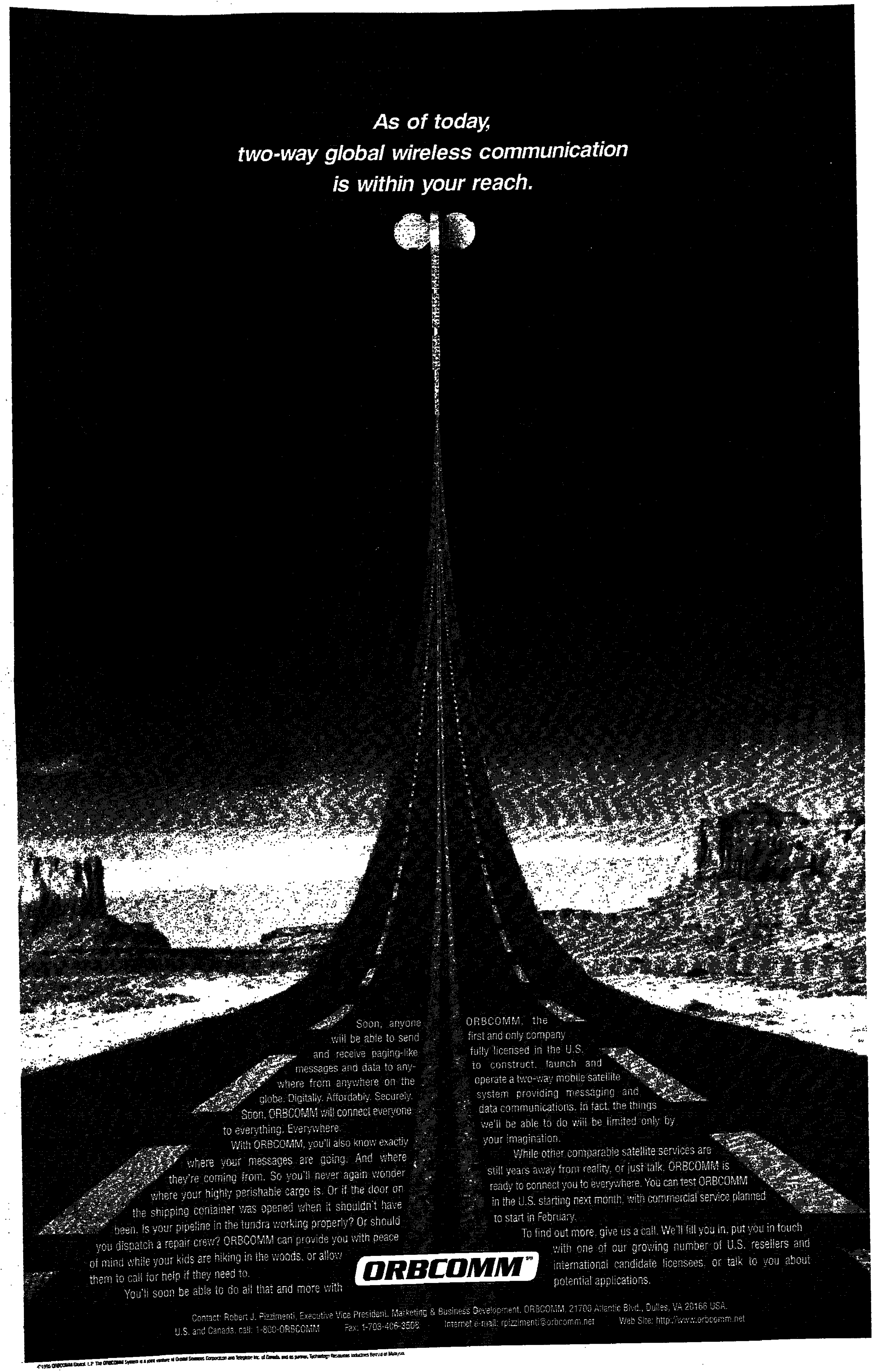
Mr González made it clear that Argentina would turn a blind eye to company participation in the Falkland Islands government's round, as long as it paid levies set by Argentina. Companies refusing to do so would face "severe sanctions".

A British Foreign Office spokesman said yesterday: "If companies operating in Argentina and who participate in the oil licensing round wish to pay taxes to Argentina that is their decision."

In practice Argentina could seek its 3 per cent levy for the use of onshore facilities, which most operators are likely to require.

Some oil executives at yesterday's Buenos Aires gathering expressed concern at how the "dual framework" would work in practice. How would companies know, for example, whether British or Argentine safety and environmental standards were to apply?

Meanwhile, exploration blocks in the less contentious co-operation zone, a 20,000 sq km area to the south-west of the Falklands, would be auctioned off by the Hydrocarbons Commission in the "next few months", the foreign ministry said. The joint commission is expected to divide royalties 50:50 from this zone, which includes waters claimed by both sides.


As of today,
two-way global wireless communication
is within your reach.
Soon, anyone will be able to send and receive paging-like messages and data to anywhere from anywhere on the globe. Digitally. Affordably. Securely. Soon, ORBCOMM will connect everyone to everything. Everywhere.
With ORBCOMM, you'll also know exactly where your messages are going. And where they're coming from. So you'll never again wonder where your highly perishable cargo is. Or if the door on the shipping container was opened when it shouldn't have been. Is your pipeline in the tundra working properly? Or should you dispatch a repair crew? ORBCOMM can provide you with peace of mind while your kids are hiking in the woods, or allow them to call for help if they need to.
You'll soon be able to do all that and more with
ORBCOMM
ORBCOMM, the first and only company fully licensed in the U.S. to construct, launch and operate a two-way mobile satellite system providing messaging and data communications. In fact, the things we'll be able to do will be limited only by your imagination.
While other comparable satellite services are still years away from reality, or just talk, ORBCOMM is ready to connect you to everywhere. You can test ORBCOMM in the U.S. starting next month, with commercial service planned to start in February.
To find out more, give us a call. We'll fill you in, put you in touch with one of our growing number of U.S. resellers and international candidate licensees, or talk to you about potential applications.
Contact: Robert J. Pizzimenti, Executive Vice President, Marketing & Business Development, ORBCOMM, 21700 Atlantic Blvd., Dulles, VA 20166 USA.
U.S. and Canada, call: 1-800-ORBCOMM Fax: 1-703-406-3508 Internet e-mail: rpizzimenti@orbcomm.net Web Site: http://www.orbcomm.net

French N-test prompts wave of criticism

By Our Foreign Staff

France sparked a further barrage of criticism from its EU partners as well as its critics in the Asia-Pacific region yesterday as it exploded its second nuclear device in the South Pacific.

Nine EU member states, led by the Nordic countries, spoke out against France at a meeting of EU foreign ministers in Luxembourg. The UK, a fellow member of the nuclear club, also began to retreat discreetly from its explicit support of French President Jacques Chirac.

An EU diplomat confirmed that opposition to French tests risked polarising the union and contaminating other sensitive areas of debate, particularly future efforts to construct a common defence policy. "It's basically 14 against one," he said. Austria, Belgium, Denmark, Finland, Greece, Ireland, Luxembourg, the Netherlands and Sweden all actively spoke out at the meeting.

In Paris, however, the Defence Ministry, unlike its media blitz after the first test last month, observed a diplomatic silence, adding nothing to a four-line statement announcing the blast had been carried out under the Fangataufa atoll at 00.30 Paris time on Monday (23.30 GMT on Sunday). In contrast to other French tests aimed at examining reliability of existing weapons or improving the technique of simulating future tests, Sunday's underground explosion was a final check of a new submarine missile warhead.

Mr Malcolm Rifkind, British foreign secretary, said in Luxembourg that it was important to remember the French government's pledge to support a "zero option" on nuclear testing but added that it was up to France to justify its decision. Asked if the French decision risked upsetting EU business, he replied: "Yes there is. That is obviously something France will wish to reflect upon."

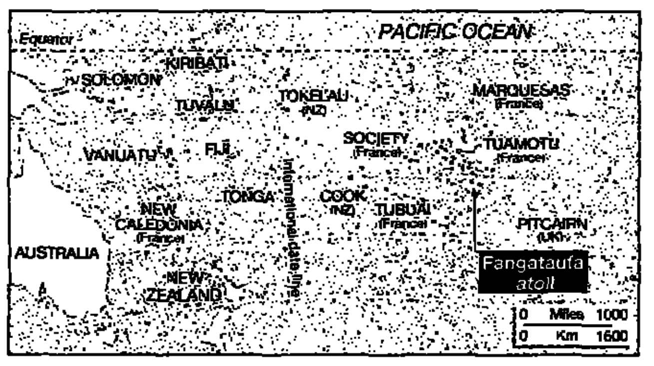
Mr Niels Helvig Petersen, Danish foreign minister, said he welcomed the more critical British attitude, adding: "Those who kept silent did not do so because they support the French nuclear tests but because they do not want to criticise a friend and ally." Both Russia and the US, two other nuclear powers, said yesterday that they regretted the French test.

However, Mr Hervé de Charette, French foreign minister, denied that France was virtually isolated and criticised the environmental organisation Greenpeace and the media for exaggerating the nuclear issue. "I don't think there is any damage to French diplomacy."

In the Asia-Pacific region, criticism of France's renewed testing continued unabated.

In Japan, Foreign Minister Yohei Kono told Mr Jean-Bernanrd Ouvrieu, the French ambassador, he "strongly regretted you do not understand Japan's consistent position on this matter" and urged France halt the testing.

jIn Australia, Prime Minister Paul Keating said his country's efforts to press the French to halt its programme would be "unceasing and unrelenting", adding that talks with others countries in bringing a resolution before the United Nations General Assembly were "well-advanced".



Japan's big money arcade game lures a youthful punter

Michiyo Nakamoto reports on successful attempts to shed the seedy image of pachinko, one of the country's biggest leisure industries

From the outside it looks like any other shopping mall in Tokyo's cramped city centres. But the milky white seven-story building in the heart of Shibuya, where the city's youth gather for an evening's fun, is Tokyo's latest landmark dedicated to pachinko, the Japanese version of pinball.

Inside, the long rows of players watch blurry-eyed as the pachinko balls clang their way past the flashing pins and gaping holes.

The Maruhan Pachinko Tower, which opened this July, is home to 1,090 garish pachinko machines spilling into plastic trays dozens of silver balls which players exchange for prizes.

For decades, pachinko parlours have been a common feature of Japanese neighbourhoods, a refuge for the harried salaryman, lonely pensioner or frustrated housewife.

But the game – played by buying a handful of silver balls from the parlour and dropping them into a machine, hoping to trigger a discharge of even more balls – has long been shunned by the more snobbish members of Japanese society.

This is because of the gambling involved, the industry's alleged links to gangsters and the seedy atmosphere of the traditional parlours. Although gambling is illegal in Japan, players openly exchange their winnings for money rather than the prizes.

Recently, however, a new breed of pachinko parlour has been trying to upgrade the industry's image and appeal to a wider, younger clientele.

The Maruhan Pachinko Tower, by far the most ambitious of the new class, is a bold experiment in shedding the industry's sleazy image and transforming the game into a trendy fad for young people. By doing so, pachinko companies like Maruhan hope they can win respectability and expand beyond their traditional patrons.

Not that pachinko has suffered much in the recent economic downturn.

The Japanese, though not known to be risk-takers, certainly have a yen for this type of gambling. Last year, the industry took more than Y17,800bn (£144bn), far outstripping the combined sales of theatres, concert halls, horse racing, other games arcades and karaoke combined.

Pachinko's annual turnover exceeded the production value of Japan's car industry, which amounted to Y14,309bn last year, and of industrial and consumer electronics combined, at Y12,840bn.

In spite of its dark side, pachinko has continued to grow strongly, even during Japan's longest recession since the war. In the past five years, sales have grown 36 per cent and the average amount of money the players spend per year has risen from Y78,800 to Y85,200, according to this year's Leisure White Paper, published by an arm of the Ministry of International Trade and Industry.

Avid players visit a parlour at least once a week and spend between Y10,000 to Y20,000 on each visit. The game has even produced professionals who know how to get specific machines to release balls and can support themselves on their winnings.

So far, the Maruhan Pachinko Tower has enjoyed tremendous success among the young, suggesting that the game could be seeing another period of strong growth. Since its opening just over three months months ago, it has had an average of 15,000 customers a day, each spending about Y5,000. Maruhan, the company which owns the tower complex, is expecting sales of Y15bn from the tower in its first year.

More than 30 per cent of players at the Pachinko Tower are women in their 20s and 30s, and this stems from Maruhan's different approach to its customers.

The company, which runs 39 other pachinko parlours throughout Japan as well as bowling alleys and shopping complexes, has used fashionable advertising, modern customer service and a brighter, trendier decor than a typical pachinko parlour.

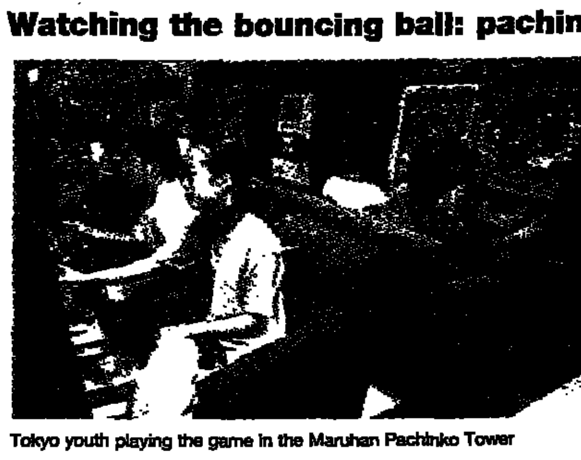
Some of its machines come complete with CD player or portable TV. The waiting area boasts chic black easy chairs, and food wagons come around from time to time to feed tireless players.

The prizes Maruhan offers also appeal to younger people. Instead of only the conventional cigarettes and knick-knacks, Maruhan offers shoes, wallets and other accessories with designer brands such as Gucci, Ferragamo and Prada, perfumes that are still unavailable elsewhere in Japan, and fashionable cosmetics such as Christian Dior's Svelte, a body-toning cream.

The growing popularity of trendier pachinko has encouraged more established businesses to jump on the bandwagon.

Leading retailers such as the Saison Group and the Daiei supermarket chain, have allowed pachinko parlours in some of their shopping complexes. Retail space, which has been in oversupply as a result of weak consumer spending and a shift to large, warehouse-style outlets in the suburbs, is increasingly taken over by pachinko par lours.

Watching the bouncing ball: pachinko top sales league



Tokyo youth playing the game in the Maruhan Pachinko Tower

Revenue (Yen bn)	1990	1994
Cinemas	172	154
Theatres	115	113
Concert halls	164	189
PACHINKO	14,260	17,933
Other games centres	349	363
Horse racing	4,033	4,530
National lottery	625	733
Karaoke	290	601

Souce: Leisure Development Centre

Hashimoto becomes deputy PM

Mr Ryutaro Hashimoto, president of Japan's dominant Liberal Democratic party, yesterday took a step closer to becoming the next premier by being offered the job of deputy prime minister, William Dawkins writes.

Mr Yohei Kono, foreign minister, yesterday gave up his second title of deputy premier, as widely expected. He handed his resignation to Mr Tomiichi Murayama, the prime minister, who agreed to confer the title, largely honorary, on Mr Hashimoto.

Mr Kono was president of the LDP for two years until last month when he stood aside in a party election to allow Mr Hashimoto become party boss. Until the LDP lost a general election two years ago, for the first time in 38 years, the party president automatically became prime minister. Mr Kono will continue as foreign minister for the time being.

ASIA-PACIFIC NEWS DIGEST

Yen policy costs Japan $13.47bn

The Bank of Japan spent the best part of $13.47bn last month in its attempt to revive the stagnant economy by driving down the yen against the US dollar. That figure represents the increase in the central bank's foreign exchange reserves in September, to set a world record, for the eighth month running, of $179.86bn, the finance ministry announced yesterday. The bulk of the increase, an estimated $11bn, came from market intervention, with the remainder from profits on managing the bank's own funds.

The BOJ's currency market operations were, however, less successful last month than in August, when the yen fell by 13 per cent against the US currency, helped by intervention from the US and German central banks. Between the beginning and end of September, the exchange rate barely moved, from Y97.38 to the dollar, to Y98.05, though the dollar did touch Y104.68 at one point, on September 19.

According to market reports, the BOJ's heaviest bout of dollar buying took place on September 8, when it purchased $5bn on the same day as halving the official discount rate to 0.5 per cent, a level unheard of in any other leading economy since the second world war. Japan has been the world's leading holder of foreign currency for nearly two years, Taiwan is second with $101.2bn and the US third with $94.8bn. *William Dawkins, Tokyo*

Pacific trade liberalisation call

The Pacific Economic Co-operation Council has added its voice to calls for trade liberalisation coming from business groups in the Asia-Pacific region. In a "Beijing Statement", adopted on the basis of discussions at its 11th general meeting held last week in Beijing, PECC urges Asia Pacific economies to "take the lead in the global dismantling of obstacles to trade and investment and extending coverage of the Gatt/WTO principles to the constantly increasing range of international economic transactions".

The statement singles out the the forthcoming meeting of WTO ministers in Singapore as a "unique opportunity" to go beyond the achievements of the Uruguay Round and "launch a new round of multilateral negotiations". PECC groups businessmen, academics and government officials from 22 Asia-Pacific countries who are invited to express their views on trade, investment and development co-operation issues in an informal capacity. *Sophie Roell, Beijing*

English press returns to Saigon

Ho Chi Minh City, formerly Saigon, Vietnam's biggest city and main business centre, got its first English-language daily newspaper since the Vietnam War when the Saigon Times Daily started publication yesterday. The newspaper is aimed at foreign and local businessmen and will compete with the country's existing English-language newspaper, the Vietnam News, published in the capital Hanoi by the official Vietnam News Agency (VNA).

● Hong Kong's English-language newspaper battle took a new turn yesterday as the Eastern Express slashed its price and the dominant South China Morning Post, citing higher newsprint costs, raised its price. The Eastern Express, launched by Oriental Press Group 19 months ago, is making a do-or-die bid for market share. It cut its price to HK$3 (38c). The SCMP, once controlled by Mr Rupert Murdoch and now by Malaysian businessman Robert Kuok, raised its cover charge to HK$7 from HK$6. *Reuter, Hanoi and Hong Kong.*

Philippine storm a 'calamity'

President Fidel Ramos on Monday placed 29 Philippine provinces and 28 cities under a state of calamity after tropical storm Sybil killed more than 100 people, with another 100 reported missing. Ramos also ordered the release of $1m from state funds to rebuild ravaged areas as the authorities launched what the state news agency called the country's biggest air and land operation to rescue thousands trapped by floods and mudflows. *Reuter, San Fernando, Philippines*

Thai vehicle exports up 48%

Exports of Thai assembled vehicles and vehicle parts rose 48 per cent in the first eight months to Bt7.12bn ($285m) from Bt4.82bn over the same period last year, the Automotive Industry Club said. A club spokesman said the sharp jump in motorcycle exports was the main factor behind the growth. Exports of motorcycles and components in the first eight months jumped 70.52 per cent to Bt4.47bn from Bt2.86bn in the same period a year ago. The biggest markets for Thai motorcycles were Indochina and other countries in the Association of South-east Asian Nations (Asean), which groups Brunei, Indonesia, Malaysia, the Philippines, Singapore, Thailand and Vietnam. *Reuter, Bangkok*

Aditya Birla: champion of Indian economic liberalisation

Mr Aditya Vikram Birla, who died on Saturday, headed one of India's largest business empires and was a champion of the country's economic liberalisation programme.

Mr Birla, 52, ran companies with a combined turnover of nearly $3bn (£1.9bn) with interests including textiles, chemicals, and aluminium.

Unusually for a top Indian businessman, Mr Birla developed extensive operations overseas long before the government of Mr P.V. Narasimha Rao, the prime minister, started promoting commercial contacts with the rest of the world in its post-1991 economic reforms.

While other business groups were mostly content to operate in a heavily-protected home market, Mr Birla's companies invested in Thailand, the Philippines, Indonesia, Malaysia and elsewhere. By last year, over a third of Mr Birla's companies' turnover was generated outside India.

Mr Birla argued that this overseas experience put him in a strong position to meet growing competition from international companies after India opened its markets after 1991. He was much sought-after by foreign companies as a joint venture partner in India.

Mr Birla was of a wealthy trading family which made its fortune in the early 20th century in Calcutta, the commercial centre of British India. The family prospered under the legendary leadership of Mr G.K. Birla, Mr Aditya Birla's grandfather, who dominated the business for more than 60 years until his death in 1983.

Mr G.K. Birla divided his business among his heirs but reserved the best operations for Mr Aditya Birla because of his acknowledged commercial talents.

Mr Aditya Birla's core companies were Grasim Industries, Hindalco Industries, Indian Rayon and Industries, and Indo Gulf Fertilisers and Chemicals.

Mr Birla is likely to be succeeded by his 27-year-old son, Mr Kumarmangalam Birla.

Birla: overseas operations

New Zealand government aims to sell the wood from the trees

Plans for a national asset are arousing anger, reports **Terry Hall**

The New Zealand government is preparing to privatise one of the state's last big assets – a large area of North Island state forests. Strong interest has been shown in the planned sale, one of the few remaining opportunities anywhere for an international resources company to gain control over millions of acres of trees.

The sale, politically risky for the government which is already subject to vigorous resistance from the Maori tribes and the political opposition over the project, is expected to be finalised around the middle of next year just before the general election.

Opinion polls show the public overwhelmingly opposed to selling off the forests, an antagonism that could erode the ruling National party's hopes of governing alone under the country's new German-style voting system.

Weyerhauser, the big US forestry company, has confirmed it will bid for the cutting rights to the forests and has already hosted a visit of a number of MPs to its Tacoma, Washington, headquarters.

Other companies said to be interested include the New Zealand-based Fletcher Challenge and Carter Holt Harvey, and US companies ITT Rayonier and Georgia Pacific. Juken Nissho is among several Asian companies also said to have indicated an interest.

Opposition parties claim that the sale, promoted by Mr Bill Birch, finance minister, is being "hustled through" so the government can complete its asset sales agenda before the first parliament using the new voting system.

The opposition Labour party says the sale, which could raise up to NZ$2.1bn ($1.4bn), is designed to raise money so Mr Birch can meet the government's net debt target of 30 per cent of gross domestic product before the election. Mr Birch has promised a round of substantial tax cuts if the net debt figure is 30 per cent or less.

Mr Birch says this claim is "ridiculous. We want to make a decision on the size and scale of the tax cuts by December or so. We won't have sold the forests by then." The money from the forest sale would go towards debt reduction.

Maori tribes have already claimed the land on which the forests stand through the Treaty of Waitangi court process, and the land is not being offered for sale. However, as soon as the government announced the proposed sale of the forests, the Maori people said they also wanted possession of the trees.

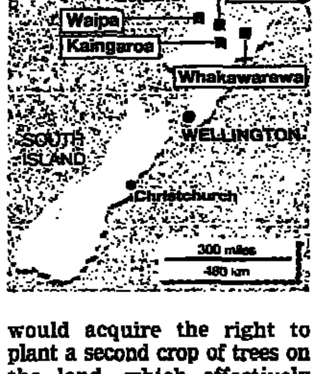
The government responded by saying it would consult with them over the future of the land as it is required to do. But a government spokesman said ownership of the land was a different issue from control of the trees and that it intends to go ahead with the sale. This is likely to lead to Maori court action.

The largest forest for sale is the 124,000 hectare Kaingaroa plantation, which contains valuable stands of near-mature radiata pine, Douglas fir and other species. Other forests are at Rotoehu and Whakawarewa, and the big Waipa sawmill is also to be sold. The forests, which are managed by the state-owned Forestry Corporation, made a profit of NZ$141m in the 15 months to June, on sales of NZ$495m.

The forests produce 16m cubic metres of timber a year, forecast to reach 40m cu metres by 2010. Any buyer would acquire the right to plant a second crop of trees on the land, which effectively means they gain leasehold rights for up to 70 years.

Mr Birch said it was important the sales proceed, as it was in the national interest to add value to the forestry resource, not simply to export raw logs. An investment of NZ$4.5bn was needed over the next 15 years. "It is not the government's desire or the taxpayers' interest for it to provide this capital," he declared.

Ms Rosanne Meo, chairperson of the Forestry Corporation, said a need existed for new investment to maximise the forests' potential. The government had said it would not give the corporation the capital needed to become a timber processor, she added. She confirmed the corporation would try to ensure any buyer invested adequate capital to maximise the value of the forests. "There are some good cash buyers out there."



INTERNATIONAL ECONOMIC INDICATORS: BALANCE OF PAYMENTS

Trade figures are given in billions of European currency units (Ecu). The Ecu exchange rate shows the number of national currency units per Ecu. The nominal effective exchange rate is an index with 1985=100.

UNITED STATES

	Exports	Visible trade balance	Current account balance	Ecu exchange rate	Effective exchange rate
1985	279.8	−174.2	−163.0	0.7623	100.0
1986	231.0	−140.6	−153.4	0.9836	81.4
1987	220.2	−131.8	−144.1	1.1541	71.9
1988	272.5	−100.2	−107.4	1.1833	67.0
1989	330.2	−99.3	−94.3	1.1017	70.0
1990	309.0	−79.3	−72.7	1.2745	66.7
1991	340.5	−53.5	−6.0	1.2391	65.7
1992	345.9	−65.2	−47.5	1.2957	64.4
1993	397.3	−98.7	−85.4	1.1705	66.3
1994	432.3	−127.0	−127.6	1.1857	65.1
4th qtr.1994	110.8	−32.3	−35.1	1.2346	63.3
1st qtr.1995	111.4	−32.6	−30.9	1.2619	62.7
2nd qtr.1995	110.1	−33.1	−33.1	1.3175	59.0
3rd qtr.1995					61.0
October 1994	35.3	−10.9	n.a.	1.2544	62.6
November	36.6	−11.5	n.a.	1.2369	63.0
December	38.9	−9.9	n.a.	1.2126	64.4
January 1995	36.8	−12.0	n.a.	1.2374	64.0
February	37.2	−10.7	n.a.	1.2455	63.3
March	37.4	−9.9	n.a.	1.3029	60.8
April	36.0	−11.1	n.a.	1.3279	58.7
May	37.6	−10.8	n.a.	1.3055	59.1
June	36.6	−11.2	n.a.	1.3192	59.0
July	35.1	−11.7	n.a.	1.3335	59.2
August				1.2954	61.3
September					62.5

JAPAN

	Exports	Visible trade balance	Current account balance	Ecu exchange rate	Effective exchange rate
1985	228.2	73.5	84.5	180.50	100.0
1986	206.9	94.2	87.2	165.11	127.7
1987	194.7	83.7	75.5	166.58	138.8
1988	218.7	79.8	67.0	151.51	153.7
1989	245.5	70.6	53.4	151.87	147.0
1990	220.0	50.0	28.5	183.94	132.5
1991	247.6	83.3	62.4	166.44	143.7
1992	254.8	102.1	90.4	164.05	150.7
1993	300.0	120.8	111.1	130.31	181.0
1994	323.5	122.5	108.8	120.99	194.9
4th qtr.1994	81.1	28.5	24.4	122.03	197.6
1st qtr.1995	81.9	28.2	23.4	121.16	202.1
2nd qtr.1995	87.5	29.4	23.6	111.31	225.3
3rd qtr.1995					203.7
October 1994	25.7	8.4	7.2	123.44	197.1
November	27.5	10.2	8.6	121.21	199.1
December	27.9	9.9	8.6	121.44	196.6
January 1995	25.8	8.7	7.8	123.32	196.1
February	28.7	9.8	8.4	122.27	198.1
March	27.4	9.7	7.2	117.89	211.3
April	29.0	8.8	6.2	111.24	226.8
May	29.1	10.0	8.1	111.17	224.4
June	29.4	10.5	9.3	111.51	225.1
July	26.8	7.9	7.2	116.38	217.2
August				122.52	202.6
September					191.6

GERMANY

	Exports	Visible trade balance	Current account balance	Ecu exchange rate	Effective exchange rate
1985	242.7	33.2	22.5	2.2260	100.0
1986	248.5	53.5	41.3	2.1279	108.6
1987	254.4	56.7	40.0	2.0710	114.9
1988	272.6	61.4	41.9	2.0739	114.1
1989	310.1	65.2	52.0	2.0681	113.3
1990	324.3	51.7	38.5	2.0537	118.1
1991	327.3	11.0	−15.6	2.0480	117.1
1992	330.5	16.6	−16.7	2.0187	120.6
1993	323.0	31.4	−13.4	1.9337	125.3
1994	358.8	37.9	−17.4	1.9188	125.6
4th qtr.1994	93.2	9.3	−4.4	1.9056	127.3
1st qtr.1995	94.4	11.8	−2.0	1.8645	131.1
2nd qtr.1995	98.9	12.8	−1.4	1.8402	133.4
3rd qtr.1995					131.7
October 1994	30.7	3.4	−2.9	1.9072	127.3
November	31.0	3.9	0.6	1.9044	127.3
December	31.5	2.0	−2.1	1.9054	127.3
January 1995	30.8	5.0	−0.4	1.8929	128.7
February	32.0	3.8	−1.5	1.8698	130.0
March	31.6	2.9	−0.1	1.8308	134.4
April	32.9	4.6	−0.9	1.8320	134.5
May	32.1	4.1	−0.1	1.8420	132.9
June	34.0	3.9	−0.5	1.8465	132.7
July				1.8511	133.0
August				1.8705	131.1
September					131.1

FRANCE

	Exports	Visible trade balance	Current account balance	Ecu exchange rate	Effective exchange rate
1985	133.4	−3.7	−0.2	6.7942	100.0
1986	127.1	0.0	3.0	6.7946	102.7
1987	128.3	−4.6	−3.7	6.9265	102.7
1988	141.9	−4.7	−3.4	7.0354	100.6
1989	162.9	−6.3	−3.6	7.0169	99.6
1990	170.1	−7.2	−7.2	6.9202	103.8
1991	175.4	−4.2	−4.9	6.9643	102.1
1992	182.5	4.5	2.9	6.8420	105.4
1993	179.6	13.3	8.0	6.6261	109.1
1994	198.8	12.9	6.6	6.5659	110.1
4th qtr.1994	52.8	4.1	1.0	6.5426	111.0
1st qtr.1995	54.9	4.7	7.0	6.5115	112.2
2nd qtr.1995	55.7	4.6	4.4	6.4802	113.2
3rd qtr.1995					114.0
October 1994	17.4	1.55	0.41	6.5281	111.4
November	17.4	1.09	−0.41	6.5396	111.0
December	18.0	1.46	1.04	6.5612	110.7
January 1995	17.8	1.32	4.95	6.5484	111.4
February	18.6	1.63	1.25	6.5040	111.7
March	18.5	1.72	0.79	6.4941	113.3
April	18.5	1.81	1.58	6.4371	114.6
May	18.5	1.29	1.13	6.5218	112.2
June	18.7	1.50	1.70	6.4818	113.1
July	17.5	0.82		6.4424	114.3
August				6.4322	114.1
September					113.7

ITALY

	Exports	Visible trade balance	Current account balance	Ecu exchange rate	Effective exchange rate
1985	103.7	−16.0	−5.4	1443.0	100.0
1986	99.4	−2.5	−1.4	1461.6	101.4
1987	100.7	−7.5	−2.1	1494.3	101.1
1988	108.3	−8.9	−6.0	1536.8	97.7
1989	127.8	−11.3	−17.0	1509.2	98.6
1990	133.6	−9.3	−18.0	1523.2	100.1
1991	137.0	−10.5	−17.7	1531.3	98.7
1992	137.9	−8.0	−21.5	1591.5	95.6
1993	144.3	17.9	9.7	1836.7	80.5
1994	160.1	18.6	13.1	1908.6	77.0
4th qtr.1994	43.5	4.3	3.9	1980.2	75.0
1st qtr.1995	41.1	2.9	−1.2	2069.8	70.8
2nd qtr.1995	44.3	5.0	3.9	2198.2	66.4
3rd qtr.1995					70.0
October 1994	13.9	1.6	1.1	1942.9	75.8
November	14.0	1.1	0.9	1958.1	75.0
December	15.6	1.5	1.9	1979.6	74.2
January 1995	12.5	0.6	−2.0	1992.4	73.8
February	13.5	0.7	0.8	2017.1	72.5
March	15.0	1.6	0.0	2199.8	66.3
April	12.9	1.6	−0.7	2273.5	64.1
May	15.3	1.6	2.4	2159.8	67.4
June	16.1	1.8	2.2	2161.4	67.5
July			1.4	2146.5	68.3
August				2080.2	70.5
September					71.0

UNITED KINGDOM

	Exports	Visible trade balance	Current account balance	Ecu exchange rate	Effective exchange rate
1985	132.4	−5.7	3.8	0.5890	100.0
1986	108.3	−14.2	−1.3	0.6708	91.1
1987	112.3	−16.4	−7.1	0.7047	89.3
1988	120.9	−32.3	−25.0	0.6643	94.7
1989	137.0	−36.7	−33.5	0.6728	91.9
1990	142.3	−26.3	−26.6	0.7150	89.8
1991	147.7	−14.7	−11.7	0.7002	90.5
1992	145.9	−17.8	−13.4	0.7359	87.1
1993	156.1	−17.2	−14.2	0.7780	79.9
1994	173.8	−13.7	−2.2	0.7736	80.1
4th qtr.1994	45.3	−3.9	−0.66	0.7791	80.0
1st qtr.1995	46.1	−2.5	−1.85	0.7974	76.3
2nd qtr.1995	45.2	−3.9	−2.86	0.8253	75.7
3rd qtr.1995				0.8268	75.7
October 1994	14.9	−0.95	n.a.	0.7812	80.0
November	15.4	−0.92	n.a.	0.7796	80.0
December	15.0	−1.98	n.a.	0.7775	80.0
January 1995	15.3	−0.99	n.a.	0.7858	79.6
February	15.5	−0.91	n.a.	0.7923	78.5
March	15.4	−0.84	n.a.	0.8141	76.9
April	14.8	−1.64	n.a.	0.8261	75.9
May	15.2	−1.23	n.a.	0.8227	75.7
June	15.3	−1.05	n.a.	0.8271	75.5
July			n.a.	0.8359	75.1
August			n.a.	0.8261	75.8
September			n.a.	0.8183	76.2

Due to the introduction of the single market, EC countries are currently changing to a new system of compiling trade statistics. All trade figures are seasonally adjusted, except for the Italian series and the German current account. Imports can be derived by subtracting the visible trade balance from exports. Export and import data are calculated on the FOB (free on board) basis, except for German and Italian imports which use the CIF method (including carriage, insurance and freight charges). German data up to and including June 1990, shown in italics, refer to the former West Germany. The nominal effective exchange rates are period averages of Bank of England trade-weighted indices. Data supplied by Datastream and WEFA from national government and central bank sources.

Nigerians again ask why the transition needs so much time

Abacha plan raises same old questions

By Paul Adams in Lagos

The timetable for Nigeria's three-year transition to civil rule, announced by Gen Sani Abacha, head of state, on Sunday, raises questions by now familiar to Nigerians: why do army rulers need so much time to hold elections, and does their management of the economy justify the prolonged stay in office?

The record of past military rulers' transition programmes does not inspire confidence. In the 35 years since independence, 25 have been spent under army rule.

The eight-year transition of Gen Ibrahim Babangida, three times postponed, ended in chaos when it was almost complete, with the annulment by the army of the June 1993 presidential election.

Gen Abacha, his former deputy who seized power in November 1993 with a promise that his tenure would be brief, began the "transition to lasting democracy" by abolishing many of the remaining elected bodies in Nigeria.

Gen Babangida had created a range of elected offices for legislature and executive from local to federal government level and blamed delays in the handover on corruption and vote buying.

In a country where loyalty is mainly tribal and corruption in government is endemic, the same charges are likely to surface again.

Gen Abacha's programme has potentially even more hazards, as it includes possible additions to the existing 30 states, multiple parties which must be "federal" in character and, for the first time, the principle of rotation of power between a planned six regions.

The regions are to be created to answer criticism that, for most of its post independence history, Nigeria has been governed by northerners.

National consensus on the many issues would be difficult enough if the unofficial winner of the last election, Mr Moshood Abiola, had not been detained over a year ago and charged with treason after he declared himself president. Mr Abiola's fellow Yorubas, a group of nearly 30m around Lagos and the south-west, feel disenfranchised by the episode and are unlikely to approve a political system which has not resolved the issue.

Nigeria's attempts to negotiate a medium-term agreement with the International Monetary Fund, which would lead eventually to some rescheduling of its growing foreign debt of nearly \$40bn (£25.8bn), will be hampered by the continuing political uncertainty.

The attempts to prolong power by the Babangida regime had a disastrous effect on the economy after 1990. This government will have to put aside domestic political pressures if it is to adhere to policies which the Fund considers essential to Nigeria's recovery: restraints on government spending, deregulation of foreign exchange rates and reform or privatisation of the big state industries such as oil and telecommunications.

This year Mr Anthony Ani, the finance minister, has tightened control of government spending, but it had still exceeded the budget by the mid-year. He has maintained a stable exchange rate but at the expense of economic growth.

The government has taken up to N130bn (\$1.58bn) out of the money supply, forcing industry into an even deeper recession than last year, when it recorded a 5 per cent fall in output. Few economists believe that the monetary squeeze can be sustained without serious damage to the non-oil economy nor has it yet brought inflation down to acceptable levels.

See Editorial Comment

INTERNATIONAL NEWS DIGEST

Kenyan dissident escapes gallows

A Kenyan magistrate yesterday convicted Mr Koigi Wa Wamwere, the country's leading dissident, of robbery but cleared him of the firearms charges that would have sent him to the gallows. Mr William Tuiyot, the chief magistrate, sentenced Mr Koigi, his brother Charles, and local councillor Mr Njuguna Ngengi to four years in jail and six lashes each for simple robbery.

The three were found guilty of two counts of attempting to steal with violence weapons from officers at a police station. The trial was closely watched by critics of Kenya's human rights record and was seen as a key test for future aid by many donors. Members of Kenya's new opposition party, Safina, which Mr Koigi helped to set up, said they were convinced the former MP would have been sentenced to death if it had not been for the level of foreign interest.

Death sentences would have done Kenya enormous damage abroad, as it prepares to answer its critics at an international donors' meeting next month. *Michela Wrong, Nakuru*

Iraqi officials press for oil sales

Senior Iraqi government officials are pressing for the resumption of limited crude oil sales to ease the humanitarian situation in the country, the Middle East Economic Survey (Mees) reported yesterday.

It said the measure could be introduced after an Iraqi cabinet change and that the US had said it would not oppose implementation of UN resolution 986, which allows Iraq to sell oil worth \$2bn (£1.2bn) over six months to meet humanitarian needs. Iraq has turned down the deal, saying the close monitoring would infringe its sovereignty. *Reuter, Nicosia*

Commonwealth fund planned

Finance ministers from the Commonwealth are planning a fund to mobilise capital for investments in privatised companies and in small and medium-sized businesses in developing member states. It will be created by co-ordinating several regional funds, starting next year with a fund for Africa, Chief Emeka Anyaoku, the Commonwealth secretary-general, said in Kingston yesterday.

The Commonwealth Private Invest Initiative will be discussed by the finance ministers at a conference beginning in Kingston today. The project would be co-ordinated by agencies such as the Commonwealth Development Corporation of the UK, which was providing \$25m (£16.1m) in seed capital, Chief Anyaoku said.

"The fund will be strictly commercial, and we hope the start of the African fund next year will be followed by the creation of others soon after," he said. The facility is intended to help countries that have suffered from a decline in private investment flows. *Canute James, Kingston*

Mediterranean energy review

A two-day conference opened in Cairo yesterday to examine the financing needs of energy projects in the Mediterranean region. Organised jointly by the European Commission, the World Bank and the Observatoire Méditerranéen de l'Energie, an association of energy companies, the conference includes delegates from nearly all the countries in the south and east basin of the Mediterranean.

Mr Richard Stern, director of the industry and energy department at the World Bank, told the conference that the financing needs of the energy sector in countries in the area would be about \$250bn (£161.2bn) over the next 15 years. To meet this, he said, countries in the Middle East and North Africa would have to move faster in structural reform to attract private investment. *James Whittington, Cairo*

Cash crisis overshadows UN's 50th birthday

The United Nations' 50th birthday party starting in three weeks could turn into a shouting match – or a swansong – unless a solution is found to the organisation's deepest financial crisis.

Already, the UN's \$3.7bn (£2.4bn) mountain of unpaid dues, of which the biggest share is owed by the US, has fuelled complaints from the developing world and has clouded the transatlantic atmosphere. In their more anxious moments, UN insiders fear a walkout by France's President Jacques Chirac in protest at Washington's failure to pay its dues.

UN finances often go through a bad patch in early autumn, before end-of-year contributions trickle in. The current malaise is by no means the first, but it is the worst and fear over the UN's future has rarely been as deep.

The US, which acknowledges its \$1.3bn debt to the UN, is not the only late payer. Some 39 countries paid no contribution at all last year, while other financial arrangements are complicated by a web of small disputes, such as the reluctance of the new South African government to settle bills from the years when its white predecessor was barred from the General Assembly.

Only about 70 of the 185 member states have paid all their dues. Canada, Australia and western Europe are among the minority of states which generally pay on time.

But Washington has taken most of the blame and it is the US position which is expected to make or break the system.

The biggest consequence of the financial crisis is the UN's decision in June to stop reimbursing countries which contribute troops to peacekeeping operations. Other measures have proved less than draconian: a ban on the purchase of furniture has not prevented the installation of thousands of yards of new carpet for the forthcoming celebrations.

It is the cut-off of peacekeeping payments which has prompted the loudest complaints in European nations, and which threatens to exclude from peacekeeping business those developing countries which cannot afford to finance their own blue helmets.

The bulk of the US debt – \$940m – is on the peacekeeping account. This reflects both the ballooning of operations in Cambodia, Somalia, Rwanda and Bosnia and the suspicious attitude of Congress to multilateral operations that compromise US sovereignty.

The anger of European nations, which feel they bear most of the human and political costs of peacekeeping, has been reflected in recent outbursts in the General Assembly.

Mr Malcolm Rifkind, UK foreign secretary, last week called for wider application of the rule under which UN members which fall into arrears by more than two years should lose their General Assembly vote. This rule applies to the regular UN budget, and Mr Rifkind suggested it should be extended to the peacekeeping account as well.

There should be "no representation without taxation," he said – reversing the slogan of the American colonies' war of independence against Britain. He described as "disreputable" the fact that the UN has now tapped into its peacekeeping fund, to the tune of \$200m, after the regular budget ran out of funds in mid-August.

He also suggested that interest should be charged on arrears, and reaffirmed an Anglo-Swedish proposal for a fairer system to calculate UN contributions on the basis of members' national income.

Neither the threat of diplomatic sanctions, nor the proposal on contributions, is likely to make much difference to the US attitude. The sums at stake are tiny in relation to the US budget, and internal politics rather than external pressure will be decisive in shaping Washington's posture.

US officials say they are determined to revive the UN system, and restore US engagement – but only on condition that long-standing demands for the axing or scaling down of redundant UN programmes, and cuts in the bureaucracy, be satisfied quickly.

This represents the only hope of persuading a deeply sceptical Republican majority in the US legislature of providing the sums necessary to keep the UN system afloat and US influence intact.

The administration's requests to Congress for UN contributions in the forthcoming financial year are based on the assumption that the US will pull out of one UN agency – the Industrial Development Organisation – and sharply reduce involvement in several others.

Officials say Washington will continue to fund the World Health Organisation and Unicef, but prime candidates for a reduction in US funding include the Food and Agriculture Organisation and the International Labour Organisation.

The request also assumes that the UN peacekeeping operation in Bosnia, which costs \$5m a day, will be wound down as Nato assumes the main burden of regulating the Balkan crisis.

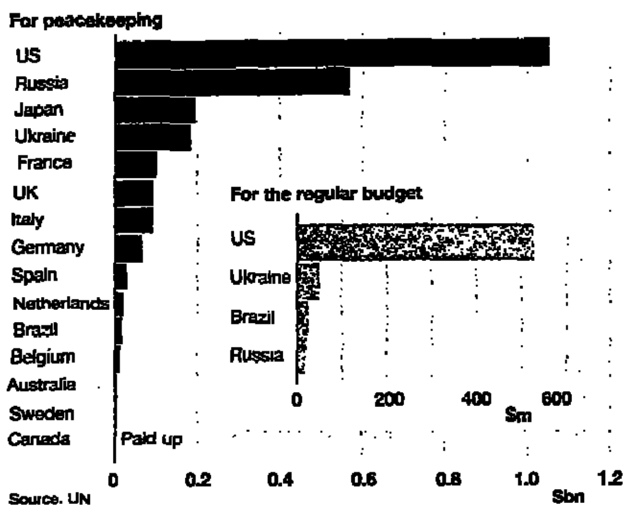
So far, the administration's request for \$510m on the peacekeeping account has met counter-proposals of \$425m from the House of Representatives and \$250m from the Senate foreign relations committee: a request of \$304m for the UN regular budget has been almost met by the House, while the Senate favours a lower number.

Yet administration officials are confident that by demonstrating their determination to secure the earliest possible action on UN reform, and keeping a ceiling on the total UN budget, they can secure enough funding from Congress to keep the UN system going.

US officials say that, despite their show of indignation, European nations are likely to fall in with whatever conditions the US sets for re-engaging with the UN. "Europeans need the UN, it makes them feel more important than they really are," said one.

Michael Littlejohns and Bruce Clark

Payment arrears to the United Nations



NEWS: WORLD TRADE

US to ease computer export curbs soon

By Nancy Dunne in Washington

The US will soon ease licensing requirements on high-speed computers to help US companies compete in the world market, the White House said yesterday.

President Bill Clinton is expected to approve a tiered system for monitoring technology exports as soon as a legal review is completed, according to Mr William Reinsch, a commerce department under-secretary.

The programme of liberalisation has been awaited impatiently by the US computer industry. For years it has complained that stricter controls than those imposed on competitors' governments have put it at a disadvantage in the global economy.

The end of the Cold War has meant rethinking the entire process. While exports of the most powerful computers to communist countries such as China is still unlikely, attention has shifted to countries now considered a greater threat. A ban on sales of sophisticated computers will remain for Iran, Iraq, North Korea and Libya.

Mr Mike McCurry, White House press secretary, said yesterday there was still some question about the extent of liberalisation. Currently companies must obtain licences to export any computers more powerful than 1,500 MTOP's, or million theoretical operations per second.

"There might be ways of staging different export decisions depending on the type of country you're dealing with," he said. "London is not like dealing with Baghdad."

Mr McCurry suggested that a new ceiling of 7,000 to 10,000 MTOP's could be set, but acknowledged that "there is a technical issue about the speed threshold that is still ... under consideration."

According to a report in the New York Times, the president is expected to approve a proposal to lift licensing requirements for all computers of less than 2,000 MTOP's.

The newspaper said the White House was expected to lift all restrictions on sales of advanced computers to US allies in Europe. Controls would also be eased on work stations.

Sales of sophisticated technology would also be allowed to other friendly developing countries not thought to be building nuclear weapons or missile technology.

The whole liberalisation effort will meet some resistance in Congress among Republican cold war hawks. The administration is fighting efforts to dismantle the Commerce Department, which represents business interests and at present takes the lead on export licensing.

Even if Commerce survives, another proposal on the table would move the export licensing responsibility from the Commerce Department to the State Department or the Pentagon. Administration officials from both departments last week told the Senate sub-committee that they do not want the responsibility.

Mr Thomas McNamara, assistant secretary of state, said the current arrangement, under which the State Department licenses munitions list items and Commerce licenses commercial products, is "the proper way to go".

The new system is expected to give the Pentagon, Energy and State Departments and the Arms Control & Disarmament Agency the power to review Commerce decisions. Any disagreements among the five could be settled by Mr Clinton.

Greeks renew their Romanian ties

Greek companies are returning to Romania after a gap of 50 years and are again focusing on sectors that were profitable in the past – trade, shipping and, most recently, banking.

Expatriate Greek families, some of whom had lived around the Black Sea for several generations, controlled much of Romania's shipping industry, banking system and commodities trade before they were dispossessed by the communists.

When normal contacts resumed with the fall of the Ceausescu regime in 1989, inherited goodwill became a significant factor in setting up joint ventures with Romanian partners, according to Greek businessmen. One example is Mr Ion Chryssovelonis, whose family owned one of Romania's largest banks in the 1930s and who now works with Papastratos, a Greek cigarette company planning to start production in Romania.

"The new traders don't usually have ties with the past but they benefit from the positive attitude towards co-operating with Greece," he said.

More than 10,000 Greek-Romanian joint ventures have been registered over the past six years, while direct Greek investment is estimated at more than $100m. While most ventures import and distribute consumer goods from Greece, partnerships in shipping, construction and food processing have flourished. The pace of investment has picked up in the past year, reflecting progress in Romania's transition to a market economy.

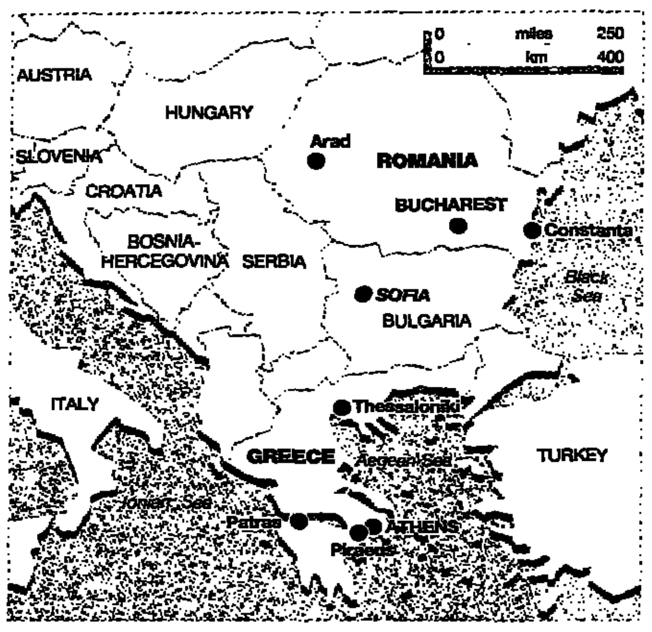
Greek trade with Romania in 1994 totalled $186m, a 40 per cent increase over the previous year. Trade has grown more slowly than with neighbouring Albania and Bulgaria. But, because Romania is the largest market in the Balkans, it offers better long-term prospects, according to Greek exporters.

Moreover, Greek confidence in Romania is reinforced by the absence of disputes over territory and minority rights, which have hampered Greek companies planning investments elsewhere in the Balkans.

Because of their domestic experience at having to cope with bureaucratic obstacles, delays in obtaining licences and permits and inconsistent legal procedures, Greek companies claim they are better equipped than western investors to overcome similar problems in Romania.

Last year, Alpha Credit Bank, the largest private Greek bank, set up an operation in Romania to service a group of larger Greek companies operating there as well as to provide financing for small and medium-sized Romanian companies.

The European Bank for Reconstruction and Development has a 20 per cent stake in Banca Bucuresti, which has a capital base of $10m. It is controlled by Alpha Romanian Holdings, a holding group established by the Greek bank, in which several large Greek



companies active in Romania also have equity participations.

With a loan book equivalent to $30m, Banca Bucuresti is expected to break even by the end of this year. It has branches in five provincial cities and plans to open another three before the end of the year.

Banca Bucuresti, which is staffed mainly by Romanians, many of whom worked for the state foreign trade bank under communism, has grown faster than expected. This reflects strong demand for credit in Romania's burgeoning private economy, now estimated to account for almost 40 per cent of gross domestic product.

Mr Panagis Vourloumis, chairman of Banca Bucuresti, said: "Small and medium-sized trading companies are the backbone of Greek activity in Romania. But some are developing from exporting to building a local distribution network and starting locally based production."

In shipping, Greeks have established themselves as the leading managers of Romania's state-owned commercial fleet. Greek owners operate about 40 tankers and freighters belonging to Petromin, the state shipping company, through joint venture arrangements.

Not only were dozens of Romanian ships laid up when the Ceausescu regime fell, but an ambitious shipbuilding programme was still far from complete.

A Greek owner, Mr Yiannis Alafouzos, pioneered shipping partnerships with Petromin by setting up a joint venture to upgrade five newly built Romanian product carriers at Greek shipyards. The cost of refitting the Romanian ships to international standards is expected to be recovered out of operating income.

The joint ventures give Greek owners an opportunity to operate extra tonnage at a lower cost than buying modern second-hand vessels or ordering new craft.

Mr Alafouzos has weathered disputes with Petromin over alleged mismanagement of funds and the attempted sale by the Romanian government in 1993 of Petromin's entire fleet, including the ships operated by Greek owners, to Forum Maritime, another Greek group. The deal was called off following objections from the Romanian parliament and the privatisation agency.

The Romanian-based joint venture now appears likely to become a longer-term partnership. It operates 12 Romanian ships, refitted by Mr Alafouzos at a cost of $75m, and has acquired another seven ships in its own name with the help of loans arranged through banks in Greece.

Kerin Hope

Siemens in telecoms venture with SMH

Siemens, the German electrical engineering group, and SMH, the leading Swiss watchmaker, have set up a 50:50 joint venture, Swatch Telecom, to develop and market miniaturised telecommunications devices under SMH's Swatch brand, writes Ian Rodger in Zurich.

Mr Nicolas Hayek, SMH chairman, said the venture's products would be based on Siemens's normal, cordless and cellular telephone technologies, taking advantage of SMH's expertise in micromechanics and microelectronics.

Siemens would be represented in the venture by its Siemens-Albis subsidiary in Zurich. The first jointly developed devices were expected on the market next year. Siemens said it expected the venture's sales to reach at least SFr200m ($166.6m) within three years.

Mr Hayek said one likely product was an "access watch", a watch equipped with electronic information that could transmit a password at an entry point. SMH is in talks with Ski Data of Salzburg, a leading supplier of entry control systems for ski resorts and parking garages.

Another idea was a card modem for laptop computers incorporating a cellular telephone.

WORLD TRADE NEWS DIGEST

Vietnam fines Taiwan investor

A court has ordered a Taiwanese company to pay 310m dong (US$281,000) in damages to its former Vietnamese partners in a failed banana plantation. The award is one of the largest to arise from a commercial dispute with foreigners since Vietnam opened up to outside investors in 1988. Vietnam still lacks a full body of laws to protect investors, and other foreign companies have run foul of what some say are opportunist rules and penalties.

A court in Vietnam's southern Dong Thap province ruled that Taiwan's Pan Viet Corp had broken its joint venture contract with hundreds of farmers and with a provincial trading company. Mr Wang Pa-Chi, Pan Viet's managing director in Vietnam, rejected the court's verdict and said he planned to appeal.

Pan Viet started a 319-hectare banana venture in 1991. It pulled out of the project three years later, according to Vietnamese news reports, after disagreeing with farmers about how much it owed them for more than 200,000 banana trees that died. The Taipei Economic and Cultural Office said the company withdrew from the project because it lost money when some farmers sold bananas to other buyers, despite having contracted to sell all their fruit to Pan Viet. *AP, Hanoi*

Bonn assistance for Hungary

Germany is prepared to guarantee credits worth DM1bn ($704m) to help Hungary modernise its economy, the two governments announced yesterday. The German federal government will guarantee DM500m of project loans to be provided by Kreditanstalt für Wiederaufbau, the German state-owned development bank.

The loans will help finance investments to improve Hungary's transport, environmental protection and municipal energy infrastructure; energy saving projects; the creation of an up-to-date land registry to facilitate investments in Hungary; and investment projects of small and medium companies. In addition, the states of Bavaria and Baden-Württemberg will each guarantee DM250m of bank loans to help finance investments by joint German-Hungarian ventures in which companies from the two states are involved. *Peter Norman, Bonn*

Chinese car imports fall

China imported 59,267 vehicles in the first half of this year, a drop of 34.9 per cent compared with the same period last year. The vehicles, which cost China $520m, included 13,742 already assembled and the rest in parts, according to customs figures.

Barter trade made up for nearly half of assembled car import, totalling 5,469 units, while 4,855 units were general imports. The rest were imported by foreign-funded enterprises.

The customs statistics show the majority of assembled vehicles were produced in Japan, the US, Russia, Romania, Germany and the Czech Republic, accounting for 59.1 per cent of total imports. In the first six months, China imported 36.2 per cent of vehicle parts from South Korea, Poland, Hungary, Bulgaria and Slovakia. *Sophie Roell, Beijing*

■ Mercedes-Benz Japan, the Japanese unit of Mercedes-Benz of Germany, yesterday launched its 1996 E-class luxury sedan models in Japan at prices on average 4 per cent cheaper than their predecessors. The Japanese price of the E230 will be Y5.7m ($56,000) compared with Y5.8m for its predecessor, the E220. Mercedes-Benz plans to sell 2,700 E-class models in the three months to end-December 1995 and 13,000 in calendar 1996. *Reuter, Tokyo*

هكذا من الأجل

FINANCIAL TIMES
COMPANIES & MARKETS
Tuesday October 3 1995

IN BRIEF

La Générale hit by capital gains drop

Société Générale de Belgique, the diversified Belgian holding company, reported a fall in net profits in the first half of this year to BFr6.3bn ($215m) from BFr6.7bn because of a sharp drop in capital gains. Page 18

Winterthur upbeat at halfway stage
Winterthur Insurance, Switzerland's second largest insurance company, reported strong growth in premium and financial income in the first half of 1995, and forecast another "double-digit increase" in consolidated net income for the full year. Page 18

Skanska and Aker cement Euroc deal
Skanska, Sweden's biggest construction company, and Aker, the Norwegian petroleum, cement and technology group, joined forces to create a leading European cement company through the expansion of the Swedish-based unit Euroc. Page 18

Cosmetics warning could spark price war
Shiseido, Japan's largest cosmetics producer, accepted an official warning against enforcing retail prices, opening the way for a further price war in what used to be a market dominated by producers. Page 19

Japanese life assurers downgraded
Uncertainty about the Japanese life assurance industry prompted Moody's Investors Services, the US credit rating agency, to lower the financial strength ratings of three of the country's leading groups. Page 19

Hotel group signs deal with Mohegan tribe
Sun International Hotels, the international leisure and gaming group, announced a $250m (£158m) joint venture with the Mohegans, a tribe of American Indians, to develop a casino and entertainment complex in the US state of Connecticut. The deal will be the first in which an Indian tribe has raised funds on the capital markets. Page 20

Marcopolo explores Japanese way of work
A visit to Japan in 1986 by two senior managers of Marcopolo, the Brazilian bus maker, has resulted in the rare appearance of Japanese-style working practices in Latin America – including production line workers cleaning the toilets. Page 20

Lucas to pay US government $88m
Lucas Industries, the UK automotive and aerospace systems maker, is to pay the US government $88m to settle a dispute which has led to it being barred from taking any new defence contracts with the Pentagon. It will be taken as an exceptional item in its 1994-95 accounts. Page 21

NatWest sells payroll services to Ceridian
National Westminster Bank of the UK is to sell part of its computer services subsidiary Centre-file to Ceridian Corporation of Minneapolis for £33.1m ($51m). Page 21

Aran to release independent valuation
Aran Energy, the Irish oil exploration company fighting a £161m ($249m) bid by US rival Atlantic Richfield Corp, will today publish an independent valuation suggesting that it is worth almost £280m. Page 21

Companies in this issue

Market Statistics

Chief price changes yesterday

FRANKFURT (DM)			
Rises			
Asko Prf	740	+	10
BMW	796	+	13
Hochtief	712	+	7
Karstadt	542	+	9
VEW	471	+	13
Falls			
Lahmeyer	545	-	10
NEW YORK ($)			
Rises			
First Choice	7⅞	+	1⅛
Falls			
Acordia	25¼	-	2⅝
Caterpillar	55⅝	-	1⅛
Micron	78½	-	1
Sears Roebuck	35⅞	-	1
VLSI Tech	33⅛	-	1⅛
LONDON (Pence)			
Rises			
Br Biotech	909	+	43
London Elect	920	+	55
Proteus	119	+	27
Sthn Elect	968	+	69
Superscape VR	436	+	34
Falls			
First Choice	70	-	18
TORONTO (C$)			
Rises			
Anser Sensors	9½	+	⅛
Hyal Pharm	7⅝	+	⅜
Tee Comm Elec	18⅞	+	1½
Falls			
Gandalf Tech	7½	-	⅛
Speedware Crp	7⅛	-	⅞
Sumtall Tec	11⅞	-	⅞

PARIS (FFr)			
Rises			
Alcatel	425	+	10.9
Fonc Lyon	865	+	28
St Louis	1335	+	33
Falls			
Accor	592	-	18
Bouygues	554	-	12
Cred Foncier	86.5	-	7.3
TOKYO (Yen)			
Rises			
Green Cross	760	+	25
Falls			
CSK	2860	-	110
Inax	957	-	32
Koyo Seiko	795	-	37
Ltg Trm Crdt	826	-	43
M'shita Koto	2180	-	120
HONG KONG (HK$)			
Rises			
Dao Heng Bank	26.4	+	0.75
HK Electric	26.55	+	0.7
Wlsch Hldgs	11.7	+	0.95
Falls			
Fe Aluminium	0.91	-	0.09
Lap Heng Co	11.2	-	2.4
SAS Dragon	1.97	-	0.10
BANGKOK (Baht)			
Rises			
OCC	53.0	+	3.0
Thai Asahi Gls	50.0	+	2.0
Thai Poly	63.0	+	3.0
Falls			
Dusit Thani	40.0	-	4.0
Int Cosmetics	382.0	-	24.0
TS Life	37.0	-	3.75

New York and Toronto prices at 12.30pm.

Wave of UK electricity bids grows

National Power bids £2.8bn for Southern as market prepares for further takeovers

By David Wighton in London

The takeover wave sweeping through Britain's *electricity distribution industry* intensified yesterday when National Power, the UK's largest power generation group, announced a £2.8bn ($4.3bn) agreed bid for Southern Electric, which supplies the south of England. Speculation grew of *imminent bids for other regional electricity* companies (recs).

Houston Industries and Central & South *West of the US* are expected today to launch an increased joint bid for Norweb, which supplies the northwest of England. This may beat the £10.75 cash *offer from* North West Water by as little as 10p a share.

The stock market was *predicting an* offer for London Electricity, whose shares *jumped 55p to 920p.*

National Power's £10.10 a share offer for Southern is the biggest in the sector which has seen five other recs receive bids since March.

PowerGen, National Power's smaller rival, announced a £1.9bn recommended bid for Midlands Electricity last month.

Mr John Baker, National Power's chairman, said: *"Combining the strengths of* National Power and Southern Electric is a logical development in a rapidly develop*ing electricity market. In particular,* customers will benefit from our ability to compete more effectively to supply householders when they are free to choose their supplier in 1998."

He said the two companies had discussed setting up a joint venture in supply because they believed a full merger to create a "vertically integrated" group would be blocked by the regulatory authorities. But government ministers *have indicated they were not opposed to* vertical integration in principle.

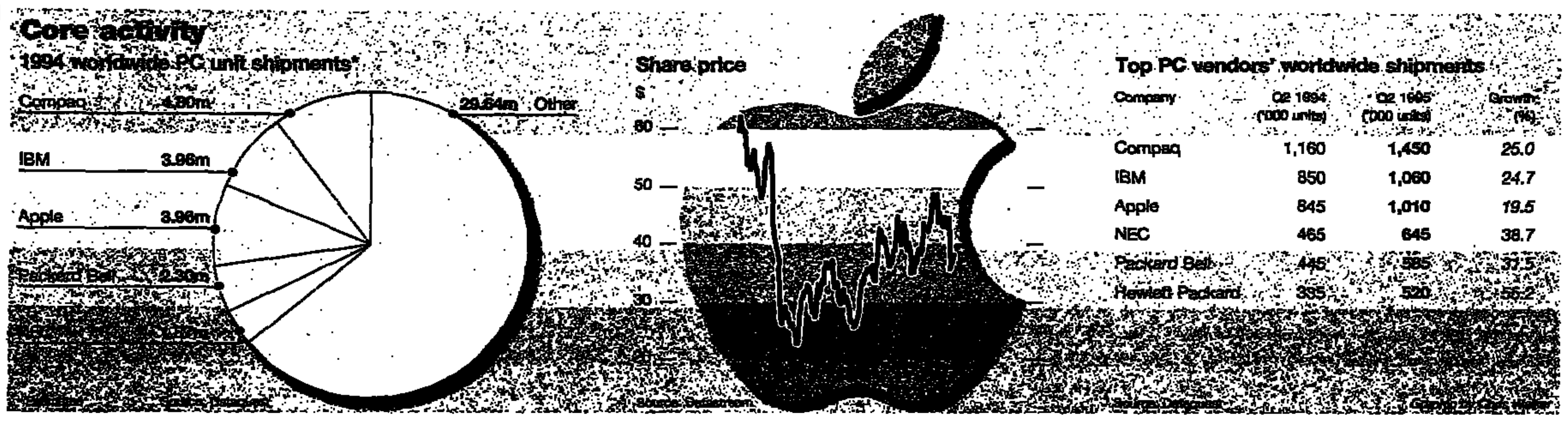
Mr Baker said: "There are still competi*tion issues which could stand in the way. But in my view it should pass the test* since it would enhance competition." Southern's shares rose 69p to 966p, a 44p discount the offer, reflecting the possibility that the bid be referred to the Monopolies and Mergers Commission. National Power's shares slipped 12½p to 503½p.

National Power said the deal would enhance its earnings per share but the proposed sale of three power stations, also announced yesterday, would offset this impact leaving earnings "broadly neutral". National Power's gearing will rise to more than 100 per cent temporarily.

The offer consists of 825p in cash and a *special dividend of 185p, which, including* the tax credit, will be worth £10.56p for non-tax paying shareholder.

Lex, Page 16

Components shortage means computer group may miss out on record sales season



Apple counts shopping days up to Christmas

With problems looming for Apple Computer, some analysts are predicting the imminent departure of Mr Michael Spindler, the company's chief executive, and questioning how long the Silicon Valley pioneer of the personal computer industry can survive as an independent company.

As Apple's directors gathered yesterday for a regularly scheduled board meeting, speculation was rife that top management changes or a broad restructuring of the company might be called for.

Yet it may be premature to ring alarm bells for Apple, in spite of some questionable decisions and competitive threats that have shaken investors' confidence and driven the company's *stock down about 27 per cent* since July.

Mr Spindler, who stepped up to chief executive two years ago after Mr John Sculley resigned under pressure, has the full confidence of the board, according to public statements by directors, including Mr Mike Markkula, *Apple's chairman and* co-founder.

Moreover, there is no obvious successor to Mr Spindler among Apple's senior executives.

Similarly, this does not appear to be an opportune time for a takeover of Apple, in spite of speculation that IBM, Oracle Systems or AT&T might be interested in acquiring the company.

IBM has apparently rejected the idea, while AT&T last month announced its intention to withdraw from the PC market as part of a broad restructuring. Oracle, which is believed to be primarily interested in Apple's software, would surely wait until Apple has completed development of a new version of the Macintosh software, scheduled for introduction next year, industry analysts say.

There is no question, however, that Apple faces serious challenges – both in the short term as it attempts to overcome a shortage of components that is hampering its ability to expand production, and in mapping out a long-term strategy.

Apple's immediate problems stem from its inability to keep pace with strong demand for Macintosh PCs. While the company planned for 23 per cent growth in unit sales for its third fiscal quarter, ending in June, orders increased 35 per cent, well above the market growth rate of about 20 per cent, says Mr Tim Bajarin, president of Creative Strategies Research International, a market research group.

The surge in Macintosh orders reflects Apple's switch to PowerPC microprocessors, a new generation of high-performance chips jointly developed with IBM and Motorola.

Apple's failure to anticipate rapid order growth has left the *company short of critical components.* As a result, Apple ended the June quarter with a $1bn order backlog, much of which must be regarded as lost sales.

Last month, Apple said the component shortage would have a negative impact on sales and earnings for the fourth fiscal quarter. It would be early 1996 before the problem was fully resolved, the company said.

Financial analysts fear Apple may miss out on what is expected to be the strongest Christmas sales season in the history of the PC industry, as demand for home computers increases.

To minimise the shortfall, Apple is redeploying components that it had planned to use in top-range Macintosh models to increase production of consumer products, says Mr Pieter Hartsook, an independent computer industry consultant. This may mean that some business customers must wait a few weeks for a new Macintosh computer, but Apple will have computers in the stores for Christmas buyers, he predicts.

In a move to prevent recurrence of the component shortages, Apple is redesigning its computers to incorporate more industry-standard parts. This will enable the company to purchase components from a broader range of suppliers, making demand forecasts less critical.

Even Apple loyalists, however, worry about the longer-term prospects for the company, as competition intensifies from manufacturers of standard Wintel PCs based on Microsoft's Windows software and Intel microprocessors.

With Apple's share of the world PC market dwindling to less than 8 per cent, down from about 15 per cent in the late 1980s, the company is increasingly seen as a niche group focused on the education, publishing and design segments of the PC market.

The recent introduction of Microsoft's Windows 95, which matches many of the features of Macintosh software, has highlighted Apple's isolation as the only non-standard PC manufacturer.

Apple's claims to superior ease of use are being eroded by advances in the Windows operating system. "There used to be obvious differences between the Macintosh and standard PCs," says Mr David Card of International Data Corporation, a market research group. "Now it is difficult to differentiate between them."

When the next generation of PC operating systems appear, in about 18 months, Microsoft will take the technology lead, as well as maintaining its market leadership, Mr Card predicts.

Already, software developers who write application programs are putting most of their efforts into addressing the far larger market for Windows programs.

Similarly, computer retailers are dedicating less shelf space to Macintosh software, giving consumers the impression that there are fewer programs available for Apple's computers.

Without a flow of new applications software, Apple could quickly be doomed to obscurity. The company must therefore reverse this trend, either by increasing its share of the PC market, or by licensing other companies to make Macintosh clones.

The latter has long been an issue of debate within Apple.

Mr Sculley, Apple's former chairman and chief executive, is widely blamed for missing opportunities to establish the Macintosh as an alternative industry standard by licensing Apple's software widely.

Mr Spindler moved quickly to launch plans to license Macintosh technology to third parties. To date, only three small US manufacturers have become licensees.

Mr Spindler promises that additional Macintosh licensees will soon be revealed. However, the current shortage of Macintosh components could only be exacerbated by the entry of new Macintosh clone manufacturers.

Apple's hopes are pinned on the joint development, with IBM, of a common hardware reference platform (CHRP): a computer that could run applications designed for the Macintosh, Microsoft's Windows or IBM's *competing OS/2 Warp PC operating system.*

Apple has been urging IBM to adopt Macintosh software for CHRP, but without success. IBM says it has no plans to give up the struggle to establish its own OS/2 operating system as an alternative to Windows, or to *license Macintosh software.*

Mr Spindler has six months to solve Apple's problems, some industry analysts predict. Others give him as long as 18 months. Either way, the clock is ticking.

Louise Kehoe

Postbank fights DM3.08bn takeover bid from consortium

By Wolfgang Münchau in Frankfurt

Deutsche Postbank, Germany's state-owned giro bank, yesterday launched its defence against a DM3.08bn ($2.1bn) hostile takeover bid from a consortium that includes Deutsche Post, the state-owned postal company, Deutsche Bank and Swiss Reinsurance.

Mr Günter Schneider, Postbank chairman, said the bid was a "waste of taxpayers money".

Postbank and Deutsche Post are state-owned corporations following last year's split of the old Bundespost organisation into three corporations – postal services, banking and telecoms. All are headed for privatisation.

Mr Schneider said Postbank was pursuing an alternative option. "Our own plans for *co-operation with potential partners* would lead to them taking up to 40 per cent in us, with each taking around 10 per cent." He did not name the parties involved, but said the receipts to the government would amount to about DM2.5bn.

The consortium is bidding for 75 per cent of the company, to be divided on the basis of 40 per cent for Deutsche Post, 20 per cent for Deutsche Bank and 15 per cent for Swiss Re.

Mr Schneider said the bid marked a purely opportunistic move for Deutsche Bank and Swiss Re. "If it happens, both would have lined their pockets. Deutsche Bank, whose aim like ours is to think and operate [in a] profit-oriented [way], would receive 20 per cent of Postbank for DM800m." He said Postbank's market value was about DM6bn, based on last year's evaluation by Salomon Brothers, the US investment bank.

Deutsche Postgewerkschaft, the postal union, also criticised *the bid, amid fears that* the takeover might see a reduction in Postbank's 16,500 workforce.

The German government yesterday promised a swift investi*gation of the takeover bid.* Mr Wolfgang Bötsch, minister for post and telecommunications, was said to be open-minded about the consortium bid because it fulfilled all the criteria in postal law.

Mr Schneider said Deutsche Bank, "like other financial institutions, suffers from cost pressure due to under-utilised branches. You will have noticed that they have just made a massive investment in a direct bank*ing network, which will be a* immediate competitor to Postbank in the field of standard financial products."

Mr Schneider dismissed a claim that the consortium had the backing of Mr Helmut Kohl, the German chancellor.

There are suspicions that the takeover is intended to lift Deutsche Post's profitability. Deutsche Post last year made a net loss of DM2.9bn, while Postbank made a a profit of DM51m, which *is expected to rise this year.*

Lex, Page 16

French bank chief calls for reforms

By Andrew Jack in Paris

Mr Jean Peyrelevade, chairman of Crédit Lyonnais, the French state-owned bank, yesterday criticised the widespread practice of appointing outsiders drawn from an elite band of former civil servants to senior positions in French companies rather than promoting people from inside the business.

Mr Peyrelevade said too many *company executives* were appointed externally and called for reforms to create a more *"collegiate" style of management* in boardrooms.

He also argued for tough prudential regulations on mutual banks to ensure they did not offer loans on unprofitably low terms.

Mr Peyrelevade's comments came after his decision last week to appoint a senior executive from Saint-Gobain, the paper and packaging company, to his four-person top committee within the bank. He said "capacity to do the job" was the sole reason for his choice. Mr Thierry Marraud comes from neither of the top French postgraduate colleges, which have been a source of many senior executive appointments to companies.

Mr Peyrelevade regretted the fact that the legal statutes of Crédit Lyonnais required that the chairman be appointed by the government, and said he had tried to persuade ministers to change these rules on a number of occasions since he took charge in November 1993.

He criticised the "monarchic" power of chief executives of French companies, and said he was trying to encourage governance whereby power was shared, so internal candidates gained experience, allowing them to be promoted to the top.

Separately, Mr Peyrelevade joined private sector rivals in criticising France's mutual banks, but said the way to produce change was to introduce regulations such as those in the insurance sector which would force the mutuals to make provisions on loans made below cost.

He also believed he was the target of a "destabilisation" campaign of false rumours about his salary. He said he had originally asked for FFr2m ($407,000) a year in salary when he took over the bank, but had taken a cut to FFr1.8m six months later when he began to implement cost-cutting measures.

Lex, Page 16; Anglo-Saxon influence, Page 18

La Générale blames weaker capital gains for fall

By Caroline Southey in Brussels

Société Générale de Belgique, the diversified Belgian holding company, yesterday reported a fall in net profits, from BFr6.7bn to BFr6.3bn ($215.5m), for the first six months of the year. It blamed the fall on a sharp drop in capital gains.

The result included a steep fall in exceptional profits, from BFr1.6bn to BFr333m, and an 18 cent rise in net profit from ordinary activities, to BFr6bn. The exceptional profits for the first half of 1994 were attributed to the sale of Union Minière's remaining stake in Union Zinc.

The exceptional profits of BFr333m were mainly from a capital gain realised by Generale Bank, a subsidiary, taking up the purchase option on its headquarters. Mr Etienne Davignon, president, said he expected the group's profit on ordinary activities this year to be higher than in 1994.

The rise in profit on ordinary activities was attributed to the "more or less universal improvement in group profits and to the increased stakes acquired in those companies with the highest profit growth". The company said overall profits were influenced by increased depreciation for goodwill, particularly because of the consolidation of Coficem/Sagem, the electronics subsidiary, for the first time.

Net profits on ordinary activities at Generale Bank, Belgium's biggest, rose from BFr1.6bn to BFr2bn as a result of increased customer deposits and the expansion into financial market activities.

Union Minière's net profits jumped from BFr148m to BFr427m in spite of a poor operating environment caused by falling zinc prices and the US dollar. Generale's share in the company's half-yearly operating profit has been reduced, from 63.4 per cent in 1994 to 50.2 per cent in 1995. Tractebel, the Belgium energy group, saw net profits rise from BFr2bn to BFr2.2bn, with all the group's activities reporting well.

Société Générale de Belgique saw the appointment of a new French chief executive, *Mr Philippe Liotier*, in September following the departure of Mr Gerard Mestrallet to France's Suez. *La Générale* is 63 per cent-owned by Suez.

Skanska and Aker to create leading cement company

By Hugh Carnegy in Stockholm

Skanska, Sweden's biggest construction company, and *Aker, the Norwegian petroleum*, cement and technology group, yesterday joined forces to create a leading European cement company through the expansion of the Swedish-based unit Euroc.

Aker is to merge its cement and building materials operations with the existing Euroc operations into a new company, as yet unnamed.

The new Euroc will have annual sales of around NKr15.5bn ($2.5bn), with almost half outside its core Nordic markets. Market share in Norway and Sweden will be around 90 per cent.

As part of a complex round of deals to establish the new company, Aker is buying a 25 per cent stake in Euroc currently held by the Finnish group Partek for NKr2.1bn.

At the same time, Aker will receive NKr3.7bn for the operations being merged with Euroc, including NKr2.7bn in cash and the balance in new Euroc shares.

Meanwhile, Skanska is paying SKr1.2bn ($172m) for 6.4m Euroc shares held by Robur, a *Swedish investment company*, to take its share in the new Euroc to 33.3 per cent – the same as that to be held by Aker.

The Euroc-Aker merger is expected to yield savings of up to SKr150m within three years. *Skanska and Aker said the* new company's principal objective would be international expansion.

"It will be better able to meet the increasing competition in the European market, which is characterised by steadily larger and more efficient units," Aker said.

Mr Sven Ohlsson, Euroc's chief executive, who will also lead the new company, said he thought the value of the deal was not enough to attract investigation by the European Commission's competition authorities.

However, he did not rule out a reaction from the Norwegian and Swedish authorities, whose approval is required before the new company can begin trading as planned from January next year.

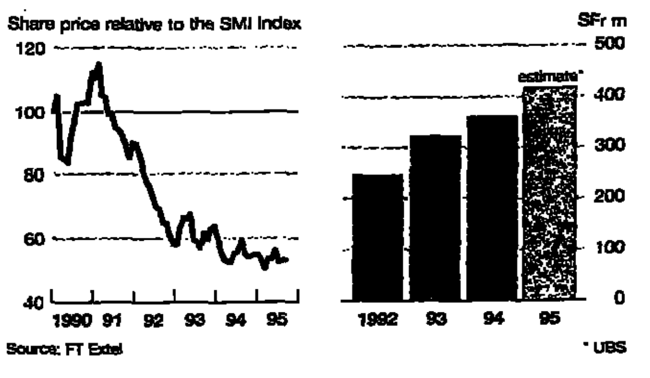
Partek, which concentrates on minerals, cargo handling and building products, said it will make a capital gain on the sale of its Euroc stake of FM500m ($117m).

Yesterday it announced a swing back to a profit after financial items in the first *eight months of FM115m, after* a loss last time of FM27m on sales up marginally to FM4bn.

Winterthur upbeat at halfway stage

By Ian Rodger in Zurich

Winterthur



Source: FT Extel
* UBS

Winterthur Insurance, Switzerland's second largest insurance company, has *reported strong growth in premium* and financial income in the first half of 1995, and forecast another "double digit increase" in consolidated net income in the full year.

The report was more positive *than expected, and the registered* shares advanced 3 per cent yesterday to SFr785. Winterthur said its optimistic profit outlook was made possible by a lower claims ratio in non-life insurance, favourable developments in the expense ratios in both life and non-life business, and a good financial result.

Gross premium income in non-life business was up 8.0 per cent to SFr6.89bn ($6bn) in the first half, and the claims *ratio dropped from 76.3 per* cent to 73.3 per cent. Winterthur attributed this improvement to portfolio streamlining, premium adjustments and the implementation of stricter underwriting guidelines, reinforced by favourable mar*ket conditions. The expense* ratio also fell, from 27.9 per cent to 27.5 per cent.

On the life side, gross premiums jumped *42.8 per cent* to SFr5.29bn, with about half of the growth coming from the first time consolidation of DBV Insurance of Germany. The expense ratio rose from 9.6 per cent to 10.8 per cent.

Investment income was up by a third to SFr2.02bn, and the value of the group's investment portfolio at the end of June was SFr67.32bn, 30 per cent higher than a year earlier.

Mr Peter Spälti, chairman, predicted that the group's total premium income in the full year would grow about 10 per cent to SFr22.5bn. In local currencies, the advance would be 15 per cent, of which about half would come from acquisitions.

Mr Spälti said that Winterthur felt under no pressure to *seek an alliance in the Swiss* market with a bank in the life insurance sector as its major competitors Zurich Insurance and Swiss Life have done. He said Winterthur was gaining market share in its domestic market.

Industrivärden plans PLM share offering

By Hugh Carnegy and Nicholas Denton

Industrivärden, the Swedish investment group, yesterday spurned a SKr4.3bn ($621m) bid for its packaging subsidiary PLM from Ball Corporation of the US and decided to go ahead with a planned public offering to its own shareholders instead.

A 55 per cent share of PLM, *Europe's third-largest beverage* packaging group, is to be offered to Industrivärden shareholders later this month, with a further 20 per cent to be sold later, depending on mar*ket conditions. Shareholders* will be entitled to buy one PLM share at SKr74 for every two shares held, implying a total value for PLM of SKr3.2bn – in effect a hefty discount.

Although Ball's bid exceeded this figure, it fell slightly short of the SKr4.5bn-SKr5bn open market valuations which *Industrivärden management* felt it could recommend to the board. Ball attempted to increase its cash and stock offer but the improvement was largely negated by a fall in *Ball's share price and the dol*lar against the Swedish krona.

SCA, the Swedish forest company, and AGA, the industrial gas group, which together own 25 per cent of Industrivärden, were believed to favour the Ball offer. But other Industrivärden shareholders are understood to have threatened to *call an independent investiga*tion into the deal if the Ball bid had been recommended.

Mr Rolf Börjesson, PLM's chief executive, welcomed the Industrivärden decision and *said he was confident the com*pany would prosper on its own. "I don't think it is so important to be number one in size. The important thing is to be big enough to meet your customers' needs and we are in that position. I do not agree with the arguments about the need for global strategies. There are not too many *synergies* between the US and Europe in beverage packaging."

Peyrelevade starts to exert an Anglo-Saxon influence

The chairman of Crédit Lyonnais plans big changes in corporate governance, reports Andrew Jack

The mood of Mr Jean Peyrelevade, chairman of Crédit Lyonnais, is beginning to change. Almost two years after taking charge of the state-owned bank, he is starting to look to the future – and for the first time claims to be enjoying what he is doing.

After innumerable tussles with the French government, the European Commission in Brussels, his auditors, debtors and banking rivals to push through a huge financial rescue package, he declares that "the first act is over". He is now getting to grips with the considerable but very different *challenges which lie ahead in* "relaunching the machine".

"In the first 18 months I can honestly say I had no pleasure of any sort," he says. "It's clearly more enjoyable now."

By the start of this summer, he had agreed in outline the package which will allow the bank to remove FFr135bn *($27.5bn) in assets from its bal*ance sheet into a company called CDR. These would then be sold, a process underwritten by the state. The final formalities should be completed early next month when the French assembly passes the law allowing the plan to go ahead.

Now Mr Peyrelevade is *happy to be able to deflect all* questions relating to the bank's past misfortunes and mismanagement, including the loans to some of its more controversial clients, such as Mr Bernard Tapie. They are all being handled through CDR, which is managed independently, and are no longer the concern of Crédit Lyonnais.

He says the storm has *passed. Several thousand net* new customers are opening accounts every month, compared with a net decline over the previous few months.

Mr Peyrelevade has begun to put into practice some of his ideas about the management of the group, which he believes stand in stark contrast to the *French norm. A strong* believer in Anglo-Saxon style corporate governance – partly inspired by his experience on the boards of companies in the English-speaking world – he set up an executive committee of four to debate the most important decisions shortly after he joined the bank in *November 1993. Earlier this* week, he announced a new member of the committee. Mr Thierry Marraud, a senior executive with Saint-Gobain, the paper and packaging group, is to replace Mr Dominique Bazy, Mr Peyrelevade's right hand man, who is rejoin Union des Assurances de Paris, the insurance group.

In contrast with many senior appointments in French companies, Mr Marraud is not drawn from the ranks of either of the country's two most elite colleges, the école polytechnique or the école nationale d'administration (Ena). Nor was he a close friend of Mr Peyrelevade. He was picked instead by a firm of head-hunters, and this more objective process was designed to send a message, largely to those inside the bank.


Associated Press

Peyrelevade: *"The captain, not just the colonel, can be general"*

"Whether he is an Enarque or polytechnicien: the eye colour, age and sex are completely irrelevant to me," says Mr Peyrelevade, himself a polytechnicien. "The sole criterion is the capacity to do the job."

His idea is to attack the idea of the monarch-like "president director-general" who rules with unchallenged power over a company, and whose board members are drawn from a circle of external contacts, creating a "glass ceiling" which prevents employees making it to the top of their own group. He points to the recent decision to appoint from *inside* Crédit Lyonnais a 40-year-old as director for information technology – promoting the idea that internal candidates can rise, and rise quickly, on merit rather than simple seniority: "The captain and not just the colonel can become a general."

Peyrelevade is also anxious *to attack the idea of the* all-powerful chairman who "goes away for a few days, reflects like a guru and then says 'we will do this' ". He has thrown the onus instead on his 15-member board, which he has charged with spending the next six months developing strategies for each business *division, in conjunction with* 200 of their staff.

Meanwhile, he is placing continued emphasis on four areas: continuing to improve the quality of risks the bank undertakes; cutting costs; and limiting the size of the balance sheet. The fourth, and most difficult, is the development of banking income – the challenge over which he is turning to his subordinates.

He sees his own role as "to set up the constraints, lay out the major objectives, judge the quality of responses and to arbitrate". One challenge will be to decide for each part of the bank what combination of ratios should be used to assess performance. He plans to compare Crédit Lyonnais' performance in these areas against a number of other French and international banks, including Société Générale, Crédit Agricole, Citicorp, National Westminster Bank and Barclays.

Mr Peyrelevade says he dreams of an organisation in which the "organigram" or chart which *lays* out the responsibilities of senior staff no longer exists, and executives become used to the idea of constant change.

All of these practices originate in his proclaimed belief in a collegiate style of management, which he argues is the way to develop talent from *within the bank which will be* able to take over the most senior jobs in the future. This despite the fact that the bank's statutes currently require that the chairman is appointed by the government – a fact he "regrets". He has repeatedly lobbied the administration to change, but reform may have to wait for privatisation, which he expects within four or five years.

EUROPEAN NEWS DIGEST

Deutsche Telekom expects results rise

Deutsche Telekom, the German telecommunications operator *scheduled for privatisation* next year, yesterday forecast 1995 sales of DM67bn ($47bn), DM3bn higher than last year. Mr Ron Sommer, chief executive, refused to give precise figures, but said 1995 profits would be "significantly" higher than the Dm1.3bn reported in 1994.

The increase would come from productivity gains and a new valuation of the company's assets. The improved figures are important because the group is to be floated in Germany, the US and Japan next year as part of Germany's biggest ever equity placing, expected to raise about DM15bn. *Michael Lindemann, Geneva*

AssiDomän to buy Hasselfors

The battle by AssiDomän, the Swedish pulp and paper group, to acquire the investment company Hasselfors and its big forestry holdings finally appeared over yesterday when the Hasselfors board accepted an increased SKr1.34bn ($193m) bid from Assi.

Hasselfors had held out for a higher price since Assi first proposed a *bid at SKr255 per share in late* August, an offer several of Hasselfors' institutional shareholders indicated they were ready to accept. Assi increased its offer last month to SKr265, but was again rebuffed and forced to bid a final SKr272 per share to win the recommendation.

The main force behind Hasselfors' resistance was Investor, the main Wallenberg family holding company, which owns 20.8 per cent of the voting capital. Investor accepted the latest revised bid, guaranteeing Assi 56.5 per cent of the votes in Hasselfors when combined with shares it already holds. Assi's main interest was to acquire Hasselfors' forest holdings in the Hasselfors region where Assi has a sawmill and a carton factory. Under the terms of its final offer, it dropped an earlier undertaking not to make substantial changes in Hasselfors' structure. *Hugh Carnegy, Stockholm*

Valmet ahead strongly

Valmet, the Finnish engineering group, yesterday reported a big improvement in results for the first eight months. Profits after financial items recovered from a loss of FM74m to a FM328m ($77m). The group repeated earlier forecasts that net sales would rise nearly 15 per cent on a comparable basis this year to about FM8.5bn and results would improve.

Operating profits at its biggest business group, paper and board machinery, would rise markedly this year. In 1994, Valmet's paper and board machinery's operating income was *FM125m*. Net sales were *FM5.47bn*. The net sales for 1995 would rise to more than FM6bn. The division received new orders worth FM6.48bn in the January to August period, an increase of 74 per cent. At end-August, the order backlog was FM5.72bn. Eight orders for new, complete machines have been received. *Reuter, Helsinki*

Schindler to repurchase shares

Schindler, the family controlled Swiss elevators and escalators *group, is offering to buy back its bearer shares at SFr6,200* each as a prior step to converting this class into registered shares or participation certificates. The group, which shocked investors in July with a forecast of a 50 per cent profit slump this year, said it would improve disclosure practices by adopting more widely accepted accounting practices from next year. *Ian Rodger, Zurich*

Profit and debt up at Parmalat

Parmalat, the fast-growing Italian dairy and foods group, increased pre-tax profit by nearly 19 per cent to L89bn ($55m) in the first six months of 1995, but also reported a rise in net debt. In the first half of 1994, the company declared a pre-tax profit of L75bn, on sales of L1,785bn. Sales in the first half of this year increased more than 14 per cent to L2,043bn but net debt also rose, reaching L1,097bn on June 30, against L961bn at the end of last year. Parent company results slipped slightly to L30bn, against L32bn in the first half of 1994, and Parmalat said it expected a broadly similar result for the second half of this year. *Andrew Hill, Milan*

Ifil increases 20% at halfway

Ifil, the Italian industrial holding company controlled by the Agnelli family, increased consolidated pre-tax profit by 20 per cent to L374bn ($232m) in the first half of 1995, helped by the improving performance of Fiat, the car and industrial group. The company also revealed it had eliminated its debt in the first half. At December 31, the group had net debt of L604bn, and at June 30 net cash of L2bn. In the first half of last year, Ifil recorded a profit of L311bn before tax.

The holding company owns large stakes in Fiat, Saint Louis, the French food and paper group, Danone, the French foods group, Rinascente, Italy's largest retailer, and Unicem, the Italian cement company.

The group, which is itself controlled by Ifi, the main Agnelli holding company, said it expected 1995 net consolidated profit to exceed the 1994 figure of L280bn. *Andrew Hill, Milan*

GEC Alsthom earnings grow

GEC Alsthom, the Anglo-French power, transport and engineering group, increased net profits by 3 *per cent to* Ecus338.9m ($446.8m) in the year to the end of March. The company, owned jointly by Alcatel Alsthom of France and GEC of the UK, said the result was achieved on sales of Ecus8.98bn, a rise of 13.3 per cent over the previous year. Mr Pierre Bilger, chief executive, said the period had been marked by a difficult environment and strong competition. He attributed *the profits rise to continued improvements in* efficiency. *John Ridding, Paris*

INTERNATIONAL COMPANIES AND FINANCE

Foreign investors hit new high on Tokyo exchange

By Gerard Baker in Tokyo

Overseas buyers now own a higher proportion of the shares listed on the Tokyo Stock Exchange than at any time in its history, according to figures published yesterday by Yamaichi Research Institute. The figures reflect the importance of the role played by foreign investors in the recent recovery in Japanese equity prices.

They show that foreigners' investments on the exchange's first section had reached Y30,183bn ($306bn) by September 22, 8.99 per cent by value of all stocks, passing the previous high of 8.8 per cent, in March 1984.

Since April, foreigners have been the principal buyers of Japanese equities, with total net purchases of more than Y2,500bn. The growth reflects decisions by big US and European pension funds and investment trusts to raise the Japanese allocations of their equity portfolios.

The aggressive buying has helped produce a rally in the equity market. Since the beginning of April, the Nikkei index of 225 leading stocks has risen by more than 15 per cent.

Among the other categories of investors, this year only individuals, who have made a surprise return to the stock market, have been net buyers.

Life insurers, non-life insurers, investment trusts and industrial corporations have been heavy net sellers. Banks, which bought aggressively in the summer, turned net sellers in August and September as they approached the end of the first half of their financial year.

The growth of foreign ownership at the expense of domestic shareholders has been a feature of ownership patterns in the Japanese stock market for most of the last two decades.

Only in the late 1980s were foreigners consistent net sellers of equities, realising big gains from the rapid growth of stock prices during the so-called bubble years.

They returned to the market in 1990 and have been net purchasers every year since, in spite of the precipitous drop in prices.

Since that year, the only other consistent net buyers have been the banks. All the other main categories of investor have been reducing their share of equity ownership.

Japanese in talks on Indonesian telecoms

By Manuela Saragosa in Jakarta

Marubeni Corp and Nichimen Group of Japan are in talks to take a stake in an Indonesian joint venture company partly-owned by France Télécom, which has been awarded a contract to install 500,000 telephone lines on the Indonesian island of Sumatra.

Earlier this year, the joint venture, PT Pramindo Ikat Nusantara, won one of the five joint operating contracts awarded to domestic and international private companies to build and operate telephone lines in four parts of Indonesia.

The joint operating schemes were designed to pave the way for the partial privatisation of state-owned domestic carrier PT Telkom before the end of this year, by guaranteeing part of its profit from the new privately-managed regional operations.

Telkom is expected to list shares in a simultaneous initial public offering on the New York, London and Jakarta stock exchanges within the next month.

PT Pramindo Ikat Nusantara is majority-owned by a unit of Indonesia's Astra International. Its other shareholders include France Cable et Radio, a unit of France Télécom. Nichimen Group and Marubeni Corp are seeking a minority stake in the joint venture company, although it is not yet clear which shareholder will reduce its stake to make way for the Japanese investment.

PT Pramindo, which will install 500,000 lines on Sumatra by early 1999, will operate the regional system for 15 years. Under the contracts awarded for the joint operating schemes in June this year, private companies will install 2m telephone lines, effectively doubling Telkom's capacity over the next three years, at a cost of about US$3bn.

EDS buys into Tadiran software subsidiary

By Julian Ozanne in Jerusalem

General Motors' Electronic Data Systems has bought 50 per cent of the shares in Tadiran Information Systems, a software subsidiary of one of Israel's largest electronics and telecommunications companies.

The deal, worth $9m, is part of Tadiran's search for strategic international partners. It should boost the forthcoming global share issue of Koor Industries, which holds a 62 per cent stake in Tadiran.

Mr Israel Zamir, chief executive of Tadiran, said the aim of the deal was to increase substantially Tadiran's software sales. EDS had global sales last year of $10.1bn.

Tadiran Information Systems, which had sales of $26m last year, develops software applications and systems for administration, finance, logistics and manufacturing.

Among EDS's contracts, meanwhile, is computerisation of the British tax system.

Tadiran's computer software business, which comprises TIS and two other publicly-traded companies, contributed $43.9m, or 5 per cent, of Tadiran's total $863m revenue last year. Lehman Brothers, which rated Tadiran "outperform", said in a recent report it expected computer revenues to grow 24 per cent in 1995, to $55.2m, and total revenues to rise to $1bn this year.

Mr Benny Gaon, Koor Industries chief executive, said the Tadiran deal was a part of Koor's strategy of linking with large international companies.

Volvo of Sweden, Germany's Henkel and Canada's Northern Telecom have bought – or taken options to buy – stakes in Koor-owned companies.

Koor, Israel's largest and most profitable industrial conglomerate with sales of $3bn, is preparing an international roadshow to sell a global offering of American depositary shares worth $130m-$150m.

Shiseido accepts warning on retail pricing tactics

By William Dawkins in Tokyo

Shiseido, Japan's largest cosmetics group, yesterday accepted an official warning against enforcing retail prices, so opening the way for a further price war in a market once dominated by producers.

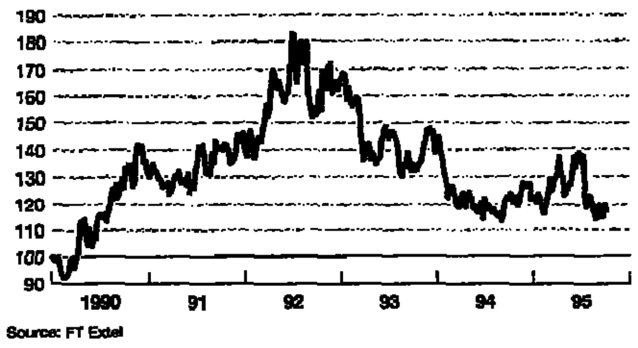
Shiseido's decision to drop its challenge to the Fair Trade Commission's June recommendation marks another shift of commercial power from manufacturers to retailers in the Y1,483bn ($15bn) cosmetics market. It is one of several Japanese retail sectors, including food and beverages, in which price discounting has loosened producers' grip.

Mr Yoshiharu Fukuhara, Shiseido president, said the group was complying with the FTC's ruling because there was a "perceived gap between some parts of Shiseido's market strategy . . . and consumers' demands, and the changing distribution system in Japan".

The FTC had warned Shiseido it was contravening anti-monopoly laws in putting pressure on retailers not to discount its products.

Shiseido

Share price relative to the Nikkei 225 Average



Source: FT Extel

Daiei and Jusco, the leading supermarket chains, were obliged to stop discounting Shiseido products because they feared the company would retaliate by ceasing deliveries, according to the FTC. Shiseido still denies making such threats. Since the FTC ruling, Daiei, Jusco and other supermarkets have offered heavy discounts on cosmetics, formerly priced – on producers' insistence – two to three times average world levels.

Traditionally, Japanese cosmetics are sold via the so-called "face-to-face" system, in which beauty councillors, trained by cosmetics companies, give customers advice on how to use cosmetics.

Manufacturers argued that such a service justified high product prices. Daiei, however, challenged that contention by offering its customers both discounts and the service of in-store beauty consultants.

Japanese insurers downgraded

By Gerard Baker

Uncertainty about the Japanese life insurance industry prompted Moody's Investors Services, the US credit rating agency, to lower the financial strength ratings of three of the country's leading insurers yesterday.

It downgraded Dai-Ichi Mutual Life and Meiji Mutual Life from Aa2 to A1, and Sumitomo Life from A1 to A3.

The agency said the move reflected deteriorating conditions for the three companies, which saw a decline in core profitability as a result of continuing asset deflation and low interest rates.

Investment income remained vulnerable to volatile market conditions, while the companies continued to rely on capital gains to bolster their earnings, Moody's said. Continuing deregulation was also expected to damage the outlook for the life insurance industry as a whole.

Dai-Ichi and Meiji's slightly stronger ratings reflected the higher levels of latent reserves on their books in the form of unrealised securities gains.

However, Moody's said all three companies' overall financial strength remained good, partly thanks to the level of regulatory support the industry enjoyed.

The Japanese life insurance sector has suffered heavily from sharp declines in domestic equity and real estate prices in the past five years. These problems have been compounded by the strong yen, which has reduced the value of many insurers' overseas investments, and falling interest rates.

The thre companies' new ratings will still leave them, in Moody's definition, in the overall "A" category, offering "good financial security", though with the risk that their strength may be susceptible to "impairment".

For Dai-Ichi and Meiji, yesterday's announcement represents the second downgrade in three years, while Sumitomo's rating has been lowered three times in the same period. Until 1992, the three companies enjoyed the highest, Aaa rating, Moody's assigns to life insurers. The downgrades will not affect funding costs directly, since the companies raise their money from customers' premiums.

NEWS DIGEST

Argyle partners refocus mine plan

The partners in the Argyle diamond mine in Western Australia have reacted to falling world diamond prices with a new plan designed to increase production of larger stones.

The companies, CRA and Ashton Mining, announced yesterday the main effect of the change would be to exclude lower-value diamonds of less than 1.5mm from the recovery process. This would immediately increase annual treatment plant capacity by 1.1m tonnes and reduce operating costs. It would cut volume by about 15 per cent, but was expected to increase revenue by about 10 per cent.

Mr John Robinson, chief executive of Ashton Mining, said yesterday markets would need to adjust to what was a substantial change. "This is an important step in the continuing process of improving Argyle's competitiveness in the international diamond industry," he said.

Argyle, the world's biggest diamond mine by carat production, suffered a setback in July when the Central Selling Organisation (CSO), the international diamond cartel operated by De Beers, the South African diamonds group, cut the project's average prices by 11 per cent. The cut, a reaction to Russian diamond sales, has particularly hit the Argyle project, where production is only about 5 per cent gem grade. Argyle sells about 80 per cent of its output through the CSO.

Bruce Jaques, Sydney

Randgold buys Tanzanian stake

Randgold & Exploration of South Africa has acquired a 25 per cent stake in a gold mining project in Tanzania for $1m, with options to increase its interest in the project. These are subject to financing further exploration and securing project finance.

Randgold said only limited further exploration was required at the Golden Ridge project, which adds to the group's exploration efforts in West and Central Africa, before a pre-feasibility study can be conducted. Randgold & Exploration is South Africa's smallest mining house, owning four marginal gold mines and widespread mineral rights throughout Africa.

In July 1995, it merged its Blyvooruitzicht gold mine with the neighbouring Doornfontein gold mine owned by mining house Gold Fields of South Africa, in the hope that the loss-making mines would perform better as one operation.

AP-DJ, Johannesburg

Ishihara Construction debt deal

Financial institutions have agreed to forgive Ishihara Construction Y10.9bn ($110.5m) in debt as part of a package to rescue the financially troubled Japanese contractor. With the rescue package, "Ishihara's restructuring is almost completed", Tadashi Shimizu, a lawyer for Ishihara, said.

Ishihara's debt stood at Y61.5bn on August 31. However, it had reduced this to Y35.8bn by the end of September, after the 15 creditor banks forgave debt worth Y10.9bn, and seven other creditor banks agreed to let Ishihara move debt of Y14.8bn to three affiliates, Mr Shimizu said. The Y14.8bn would eventually be forgiven, he said.

Mr Shimizu said the rescue package also included a cut in the repayment of Ishihara's remaining debt. It also stipulates that the financial institutions will forgive Y23.7bn of debt at Ishihara's affiliates, which Ishihara had guaranteed, he said.

Reuter, Tokyo

EUROPEAN COAL AND STEEL COMMUNITY
ECU 15.000.000 8% BONDS DUE 1996
SEMI PRIVATE PLACEMENT

We inform the Bondholders that the redemption instalment of 3.000.000, nominal due on November 7th, 1995, has been satisfied by a drawing on September 15th, 1995, in Luxembourg.

The serial numbers of the Bonds selected for redemption are as follows :

in denomination ECU 1.000 :

6	8	10	11	13	15	16	17	18	20	21	23	24	27	28	31	34	35	42	45	47	48	52	53	56	57	58	59	62	63
64	67	68	70	74	77	78	79	84	88	93	94	95	96	97	99	106	108	117	119	121	126	127	128	130	131	132	133	136	138
139	140	141	144	145	147	154	155	158	161	165	180	183	184	186	191	194	201	202	204	205	208	210	211	212	216	224	226	227	231
235	242	245	250	251	252	253	254	255	264	265	266	267	270	271	273	274	283	288	290	292	293	296	299	304	316	318	321	322	323
324	328	329	330	332	333	336	339	340	342	345	347	348	350	351	354	356	359	360	361	364	367	368	369	371	376	377	378	382	383
384	386	387	388	389	390	394	397	400	401	402	407	412	413	414	416	418	423	424	425	427	428	429	434	436	438	440	442	443	445
446	448	449	450	451	454	460	461	463	464	465	467	470	471	474	479	490	491	499	505	507	510	513	516	517	522	523	524	525	526
529	531	532	533	534	539	540	541	542	543	544	553	554	556	557	560	561	562	563	566	568	578	579	581	582	583	584	585	586	589
596	597	599	602	603	608	611	628	634	635	637	638	642	644	650	652	653	654	656	659	660	664	665	674	675	680	681	685	687	689
690	691	695	696	697	698	700	701	702	704	707	710	714	718	719	727	730	731	733	736	737	738	739	746	748	749	750	751	752	753
756	758	759	760	762	763	764	766	767	771	772	773	774	777	778	780	781	782	792	793	805	806	810	812	817	821	823	824	827	833
840	842	849	858	859	860	870	874	875	876	877	878	879	885	886	898	899	900	901	907	908	923	924	925	926	927	928	929	931	933
936	938	939	940	941	942	943	947	949	951	958	959	960	964	967	970	971	973	977	981	984	986	987	988	990	991	992	1006	1007	1008
1009	1010	1011	1013	1014	1015	1016	1017	1021	1022	1029	1030	1032	1033	1037	1038	1041	1042	1043	1045	1050	1059	1061	1062	1063	1066	1067	1068	1069	1075
1077	1078	1079	1081	1083	1084	1086	1088	1090	1091	1092	1093	1094	1095	1100	1101	1103	1105	1107	1112	1114	1115	1118	1119	1120	1122	1123	1125	1128	1137
1133	1144	1145	1147	1148	1149	1150	1152	1153	1161	1163	1164	1166	1168	1172	1174	1175	1177	1181	1183	1184	1187	1189	1190	1191	1192	1193	1194	1196	1197
1198	1210	1213	1214	1215	1216	1217	1218	1224	1227	1231	1233	1235	1237	1238	1246	1248	1253	1254	1255	1256	1258	1259	1260	1265	1267	1268	1269	1273	1274
1279	1281	1283	1284	1288	1291	1292	1294	1295	1298	1299	1300	1301	1302	1303	1304	1305	1310	1311	1312	1315	1317	1318	1319	1320	1321	1322	1323	1325	1328
1332	1333	1334	1342	1346	1347	1357	1358	1361	1369	1373	1376	1378	1379	1380	1393	1399	1400	1404	1406	1409	1410	1411	1413	1414	1415	1416	1419	1420	1421
1426	1427	1429	1436	1438	1443	1445	1448	1451	1452	1453	1456	1457	1459	1461	1464	1466	1467	1468	1469	1471	1473	1480	1486	1487	1489	1491	1492	1494	1495
1496	1497	1498	1500	1501	1502	1504	1505	1506	1507	1509	1517	1523	1532	1539	1541	1546	1547	1548	1550	1551	1552	1553	1554	1555	1559	1560	1561	1562	1564
1566	1567	1568	1570	1571	1575	1580	1581	1585	1587	1590	1593	1594	1596	1597	1598	1599	1601	1602	1610	1612	1613	1614	1615	1616	1617	1620	1621	1624	1631
1632	1633	1634	1637	1639	1641	1642	1644	1646	1652	1657	1667	1668	1672	1675	1676	1677	1678	1679	1684	1685	1686	1687	1698	1699	1701	1715	1716	1717	1718
1719	1723	1727	1730	1731	1734	1735	1739	1741	1745	1747	1753	1754	1755	1757	1759	1767	1779	1782	1784	1785	1786	1787	1788	1791	1794	1795	1798	1800	1801
1802	1803	1806	1808	1809	1810	1811	1813	1817	1818	1820	1821	1824	1825	1826	1827	1831	1833	1835	1836	1837	1843	1844	1849	1851	1852	1855	1857	1859	1860
1862	1865	1867	1869	1873	1875	1876	1877	1878	1879	1880	1884	1885	1888	1891	1893	1894	1896	1900	1901	1905	1906	1907	1908	1910	1913	1919	1921	1922	1925
1930	1931	1933	1939	1941	1942	1946	1947	1948	1949	1950	1952	1959	1968	1970	1971	1972	1977	1983	1984	1985	1988	1989	1991	1995	1998	1999	2000	2003	2006
2009	2011	2014	2015	2019	2020	2021	2023	2024	2025	2029	2031	2033	2034	2035	2036	2037	2038	2042	2043	2044	2047	2049	2050	2052	2053	2054	2055	2056	2058
2064	2065	2069	2071	2073	2074	2075	2078	2081	2088	2096	2098	2099	2100	2101	2105	2107	2108	2110	2114	2116	2118	2119	2120	2121	2136	2139	2140	2143	2144
2145	2147	2155	2156	2157	2161	2164	2172	2173	2180	2181	2183	2184	2188	2189	2191	2192	2197	2198	2204	2205	2207	2208	2209	2210	2211	2212	2213	2217	2220
2222	2224	2225	2227	2229	2231	2239	2240	2242	2243	2248	2253	2256	2258	2259	2260	2261	2262	2263	2264	2266	2267	2268	2269	2271	2272	2273	2274	2276	2287
2291	2293	2294	2295	2296	2297	2302	2303	2310	2316	2317	2318	2319	2320	2321	2322	2324	2326	2327	2328	2329	2330	2333	2334	2335	2336	2339	2340	2341	2342
2348	2354	2355	2357	2358	2361	2363	2364	2366	2370	2372	2373	2374	2375	2376	2377	2378	2380	2381	2382	2383	2384	2388	2389	2390	2391	2392	2393	2394	2395
2396	2399	2400	2403	2404	2408	2410	2412	2413	2414	2417	2418	2419	2421	2422	2423	2424	2425	2426	2427	2428	2429	2431	2432	2433	2434	2454	2456	2457	2459
2460	2461	2463	2464	2465	2468	2470	2471	2480	2481	2483	2484	2485	2486	2487	2488	2490	2492	2493	2494	2495	2501	2506	2507	2508	2512	2515	2517	2518	2519
2520	2521	2525	2526	2527	2528	2529	2530	2531	2532	2533	2536	2537	2550	2559	2564	2565	2566	2569	2576	2584	2586	2588	2591	2594	2597	2603	2606	2607	2609
2610	2611	2612	2613	2614	2621	2627	2628	2631	2637	2639	2640	2641	2642	2646	2651	2658	2659	2660	2661	2662	2670	2678	2682	2683	2684	2686	2687	2689	2691
2692	2693	2694	2695	2696	2697	2698	2699	2701	2702	2703	2704	2708	2730	2734	2737	2740	2742	2743	2744	2746	2748	2752	2754	2760	2771	2775	2779	2780	2781
2793	2797	2799	2800	2805	2806	2807	2808	2809	2810	2812	2813	2814	2815	2817	2818	2820	2822	2823	2824	2826	2829	2830	2831	2832	2834	2835	2836	2837	2838
2856	2858	2864	2866	2871	2873	2874	2878	2886	2897	2898	2899	2900	2901	2904	2905	2907	2908	2909	2910	2913	2914	2916	2917	2918	2921	2931	2935	2939	2944
2947	2957	2961	2962	2965	2966	2970	2971	2972	2973	2974	2982	2986	2987	3003	6644	6647	6654	6656	6661	6665	6667	6669	6670	6671	6672	6673	6674	6675	6676
6677	6678	6682	6684	6687	6691	6696	6701	6702	6703	6711	6713	6715	6723	6724	6725	6730	6735	6736	6738	6739	6742	6743	6746	6749	6758	6765	6766	6767	6769
6771	6772	6773	6775	6777	6779	6782	6783	6784	6788	6790	6791	6797	6803	6810	6811	6812	6813	6815	6816	6817	6819	6835	6837	6838	6850	6853	6856	6857	6861
6862	6863	6864	6866	6867	6868	6870	6872	6873	6874	6875	6876	6877	6878	6892	6897	6899	6902	6904	6911	6914	6915	6921	6923	6924	6928	6929	6930	6931	6936
6937	6938	6944	6945	6947	6949	6951	6968	6969	6970	6971	6972	6973	6974	6975	6976	6977	6978	7005	7008	7009	7016	7023	7025	7026	7031	7034	7035	7038	7040
7044	7045	7046	7049	7053	7054	7056	7058	7059	7060	7061	7062	7063	7064	7066	7067	7068	7070	7074	7075	7078	7080	7081	7083	7085	7090	7095	7096	7097	7098
7100	7101	7103	7104	7105	7107	7108	7109	7123	7125	7128	7129	7134	7135	7136	7137	7142	7144	7145	7147	7151	7152	7157	7158	7160	7165	7166	7170	7174	7177
7178	7179	7180	7184	7186	7187	7189	7190	7192	7194	7199	7202	7204	7205	7206	7211	7218	7221	7222	7225	7230	7231	7232	7238	7241	7242	7243	7245	7248	7249
7252	7255	7256	7258	7259	7260	7262	7263	7264	7266	7267	7268	7269	7270	7271	7272	7274	7276	7277	7292	7297	7298	7303	7304	7305	7308	7309	7310	7311	7312
7313	7314	7315	7316	7317	7318	7320	7321	7322	7323	7324	7325	7326	7327	7328	7329	7332	7333	7336	7339	7341	7344	7345	7346	7347	7349	7350	7356	7357	7360
7361	7364	7365	7366	7367	7368	7369	7372	7374	7375	7376	7377	7378	7379	7380	7382	7383	7384	7385	7386	7387	7388	7389	7390	7393	7396	7397	7398	7399	7417
7419	7423	7429	7430	7432	7433	7434	7435	7438	7440	7441	7442	7444	7445	7448	7449	7450	7451	7452	7453	7454	7455	7457	7458	7459	7460	7461	7466	7467	7469
7474	7478	7479	7482	7483	7485	7486	7487	7489	7490	7491	7492	7493	7495	7496	7497	7499	7500	7502	7503	7504	7505	7506	7507	7508	7509	7511	7512	7514	7515
7516	7517	7525	7530	7532	7535	7536	7537	7538	7541	7547	7549	7554	7557	7558	7559	7563	7564	7566	7569	7570	7573	7577	7579	7580	7582	7588	7593	7599	7601
7604	7608	7609	7610	7611	7614	7620	7621	7624	7632	7635	7641	7642	7647	7649	7650	7653	7654	7657	7658	7660	7662	7665	7667	7669	7670	7671	7673	7674	7675
7676	7678	7680	7685	7688	7690	7691	7693	7697	7698	7700	7702	7703	7705	7707	7708	7713	7717	7718	7719	7723	7724	7730	7731	7736	7737	7739	7742	7752	7754
7757	7761	7763	7778	7786	7788	7798	7799	7800	7801	7803	7804	7807	7808	7812	7813	7814	7816	7819	7820	7821	7823	7824	7826	7829	7831	7832	7843	7855	7856
7857	7858	7861	7863	7864	7869	7870	7871	7879	7881	7885	7886	7887	7895	7898	7901	7903	7911	7919	7930	7935	7936	7937	7940	7943	7944	7949	7950	7954	7955
7956	7957	7958	7959	7960	7961	7964	7966	7967	7969	7970	7971	7972	7974	7975	7977	7978	7981	7982	7983	7985	7997	8000	8001	8003	8004	8005	8006	8010	8011
8012	8014	8015	8018	8019	8020	8021	8022	8026	8027	8029	8030	8031	8035	8037	8038	8039	8040	8041	8042	8044	8045	8046	8047	8049	8051	8052	8053	8054	8055
8056	8058	8069	8072	8075	8076	8081	8082	8088	8090	8091	8093	8099	8102	8109	8110	8112	8114	8121	8124	8128	8136	8139	8142	8143	8144	8145	8146	8147	8148
8149	8150	8152	8153	8156	8157	8158	8159	8161	8162	8166	8167	8170	8173	8174	8176	8178	8181	8186	8191	8195	8197	8201	8205	8212	8222	8223	8224	8225	8233
8235	8237	8239	8243	8250	8251	8255	8256	8258	8271	8273	8275	8281	8284	8285	8290	8291	8297	8307	8308	8309	8322	8325	8328	8330	8331	8332	8333	8336	8337
8338	8339	8341	8342	8343	8344	8345	8346	8349	8350	8351	8352	8353	8373	8374	8376	8378	8380	8386	8387	8388	8389	8392	8393	8395	8396	8407	8409	8411	8420
8422	8431	8434	8436	8439	8441	8443	8444	8445	8450	8456	8457	8458	8466	8474	8483	8484	8488	8489	8490	8491	8492	8495	8496	8497	8501	8502	8503	8507	8511
8512	8514	8516	8517	8518	8520	8521	8523	8526	8527	8530	8535	8539	8540	8543	8549	8550	8559	8560	8561	8572	8573	8580	8584	8585	8588	8589	8591	8592	8594
8595	8597	8598	8604	8610	8611	8617	8619	8625	8630	8632	8634	8643	8645	8656	8658	8659	8660	8662	8663	8666	8667	8670	8671	8674	8675	8676	8677	8691	8696
8699	8700	8702	8706	8712	8713	8716	8719	8721	8726	8727	8730	8731	8734	8735	8736	8737	8738	8739	8740	8741	8742	8753	8754	8761	8763	8775	8776	8777	8778
8779	8780	8781	8782	8783	8784	8786	8787	8792	8794	8795	8796	8798	8799	8800	8802	8803	8808	8813	8825	8826	8827	8829	8830	8831	8833	8835	8836	8837	8840
8845	8846	8849	8857	8859	8860	8861	8862	8863	8864	8865	8867	8875	8876	8877	8879	8880	8881	8882	8883	8886	8887	8889	8890	8893	8898	8900	8902	8908	8912
8914	8915	8916	8917	8919	8920	8921	8922	8923	8928	8929	8935	8937	8943	8944	8947	8951	8953	8955	8957	8961	8967	8968	8970	8976	8980	8981	8982	8983	8985
8986	8987	8988	8989	8990	8991	8995	8997	9004	9005	9009	9010	9011	9013	9014	9015	9016	9023	9026	9027	9029	9032	9034	9035	9037	9038	9039	9041	9047	9048
9049	9052	9056	9057	9059	9061	9064	9066	9070	9077	9078	9079	9080	9083	9085	9095	9096	9097	9104	9105	9108	9116	9117	9120	9121	9128	9131	9133	9141	9142
9144	9148	9153	9156	9158	9162	9169	9171	9173	9174	9176	9178	9181	9189	9191	9196	9198	9199	9200	9201	9203	9204	9206	9208	9217	9218	9221	9223	9226	9227
9229	9237	9241	9246	9247	9248	9249	9251	9255	9256	9259	9260	9264	9268	9270	9284	9285	9292	9293	9294	9295	9299	9300	9303	9308	9310	9311	9312	9315	9323
9326	9327	9328	9341	9346	9347	9349	9350	9351	9352	9353	9355	9356	9369	9370	9371	9372	9373	9376	9377	9378	9379	9380	9387	9388	9389	9394	9395	9397	9398
9400	9408	9409	9415	9417	9418	9419	9420	9421	9422	9425	9429	9430	9431	9434	9437	9438	9439	9441	9442	9444	9445	9446	9447	9448	9449	9451	9454	9456	9457
9459	9460	9463	9465	9467	9468	9469	9470	9471	9472	9473	9475	9476	9477	9479	9480	9481	9482	9483	9484	9485	9489	9490	9494	9495	9500	9501	9505	9508	9512
9513	9514	9516	9517	9520	9522	9524	9531	9537	9538	9539	9540	9541	9542	9543	9545	9547	9549	9553	9564	9565	9566	9568	9569	9570	9572	9573	9575	9576	9577
9579	9580	9582	9585	9587	9588	9589	9594	9601	9604	9607	9610	9616	9617	9620	9621	9622	9623	9626	9627	9629	9630	9631	9633	9634	9636	9641	9645	9646	9650
9651	9654	9657	9660	9661	9662	9667	9668	9669	9673	9677	9689	9691	9692	9694	9695	9696	9697	9698	9700	9701	9703	9704	9705	9708	9709	9710	9713	9718	9722
9724	9725	9727	9730	9733	9734	9739	9742	9750	9759	9760	9767	9774	9776	9777	9778	9779	9780	9781	9782	9784	9785	9787	9788	9790	9791	9792	9793	9794	9795
9796	9797	9799	9801	9802	9803	9806	9809	9812	9814	9815	9817	9821	9822	9826	9832	9834	9835	9836	9838	9839	9849	9853	9855	9860	9861	9867	9869	9871	9879
9880	9881	9882	9884	9885	9886	9887	9888	9889	9890	9892	9896	9897	9898	9900	9903	9906	9907	9909	9912	9914	9915	9916	9921	9926	9931	9933	9935	9936	9939
9944	9947	9948	9949	9951	9952	9953	9954	9958	9959	9963	9964	9966	9967	9981	9983	9984	9990	9991	9992	9994	9995	9996	9997	9998					

in denomination ECU 5.000 :

10001	10002	10039	10058	10064	10065	10067	10069	10083	10084	10085	10098	10103	10111	10128	10129	10131	10132	10144	10146	10147	10149	10150	10153	10154	10163	10164	10168	10171	10172
10174	10175	10176	10194	10196	10197	10809	10810	10814	10815	10818	10823	10824	10825	10826	10836	10838	10839	10841	10843	10844	10854	10860	10861	10862	10864	10865	10869	10871	10872
10875	10877	10879	10883	10886	10888	10897	10899	10900	10905	10911	10914	10916	10919	10922	10928	10937	10941	10947	10948	10954	10955	10961	10964	10969	10970	10976	10978	10983	10998
11000																													

These Bonds will be reimbursed on November 7th, 1995, coupon due on November 7th, 1996 attached, according to the modalities of payment on the Bonds.
Amount outstanding on November 7th, 1996 : ECU 2.800.000

THE PRINCIPAL PAYING AGENT
SOGENAL
GROUP SOCIETE GENERALE PARIS
15, AVENUE EMILE REUTER
LUXEMBOURG

Aegon to take stake in Banamex insurance unit

By Leslie Crawford in Mexico City

Aegon, the Dutch insurance group, is to pay $250m for a substantial stake in Seguros Banamex, the insurance company of Grupo Financiero Banamex-Accival, Mexico's largest financial group.

Seguros Banamex began operations in April this year with a paid up capital of 40m pesos ($6.28m). At the end of June, the company handled premiums worth 84m pesos.

It is gradually taking over all the life insurance policies linked to some 250,000 mortgages extended by Banamex, Mexico's largest commercial bank, which holds about 30 per cent of the country's market in home loans.

Mr Donald Shepard, chairman of Aegon Insurance of the US, said Aegon's valuation of Seguros Banamex reflected the potential of the insurance business in Mexico. "Having a partner like Banamex gives us confidence that we will be major players in the life insurance business," he said.

Aegon has paid $109m for a 49 per cent stake in the Mexican company and a further $141m in debentures that will be convertible into equity of Seguros Banamex-Aegon after 10 years.

The insurance industry in Mexico is under-developed, not only in comparison with the US but with other countries in Latin America.

It accounts for only 1.5 per cent of Mexico's gross national product, against 8.8 per cent in the US and 5.2 per cent in Brazil. Less than 8 per cent of households in Mexico have insurance, and only 20 per cent of the labour force hold life insurance policies.

The total value of insurance premiums in Mexico at the end of 1994 amounted to 20.5bn pesos.

The industry, however, is expected to grow rapidly once the government begins a widespread overhaul of Mexico's state-run social security system, announced by President Ernesto Zedillo earlier this year. The reforms are expected to authorise the operation of private pension fund management companies and insurance products designed to encourage Mexicans to save more.

"We are on the verge of major changes in the domestic savings market that will create opportunities for the insurance industry," Mr Manuel Medina Mora, deputy president of Banamex, said yesterday. He added that Banamex's branch network would be used to sell a wide range of insurance products, including life, health and accident policies.

The announced reforms have awakened the interest of other foreign insurance companies in Mexico. Earlier last month, Allianz of Germany entered the Mexican market through an alliance with Bancrecer, a small Mexican bank.

Indian tribe joins casino venture

By Tim Burt

Sun International Hotels, the leisure and gaming group, yesterday announced a $250m joint venture with the Mohegans, a tribe of native American Indians, to build a casino and entertainment complex in Connecticut.

The deal, financed partly by a $175m institutional placing, is the first in which an Indian tribe has used capital markets to raise funds.

Mr Sol Kerzner, the South African entrepreneur and chairman of Sun International, said: "This is a milestone. No Indian tribe has raised money on Wall Street before."

Speaking in London yesterday, he claimed the placing had been heavily over-subscribed and hinted that other tribes could come to the market to fund gaming developments.

He also announced plans for a public share offering in Sun International, which operates 33 hotels and nine gaming resorts around the world, including Sun City in the former black homeland of Bophuthatswana.

While declining to put a timetable or size on the offering, Mr Kerzner predicted it would increase liquidity in Sun International, which is quoted on Nasdaq but remains tightly held.

Funds raised by such an offering would be channelled into further developments in North America, he added.

The deal with the Mohegans is Sun International's first foray in the US and follows more than two years of negotiations with tribal leaders.

Mr Kerzner said the 240-acre development at Montville, near Hartford, would be completed within 12 months and would employ 3,500 people. Under the deal, the 1,100 members of the Mohegan tribe will receive up to 70 per cent of the profits from the complex.

The remainder will be paid to Trading Cove Associates, a joint venture between Sun International and US hotelier Mr Len Wolman. Trading Cove has a seven-year management contract on the resort.

Of the total $250m investment, Sun International is injecting $40m into the project. Although that will lift its net borrowings to $120m, Mr Kerzner said it remained modestly geared.

It was persuaded to invest in the Montville scheme partly by the success of the nearby Foxwoods Resort Casino, where the Mashantucket Pequot Indians were said to be enjoying revenues of $1bn a year.

Sun International – advised by Bear, Stearns and Donaldson Lufkin & Jenrette Securities – decided to press ahead in spite of moves in Congress to levy corporate income tax on revenues from casinos on Indian land.

The House Ways and Means Committee has approved the first federal tax on Indian tribes, which if approved would be levied at a rate of 35 per cent. Congressional critics claim the tax exemption gives casinos on reservation land an unfair advantage over state lotteries.

Sol Kerzner: other tribes could come to the market for funds

Marcopolo watches green light

Brazil's bus maker plans to boost production, writes Angus Foster

Visitors to the factory of Marcopolo, the Brazilian bus maker, will find clean toilets but no toilet cleaners.

Production line workers are expected to tidy the toilets and the rest of the factory, in an example of Japanese-style work practices which are common in the developed world but unusual in Latin America.

Marcopolo, the continent's biggest bus manufacturer, started adopting such practices after two senior managers visited Japan in 1986. Today, the factory is full of new ideas and charts designed to improve and map production levels.

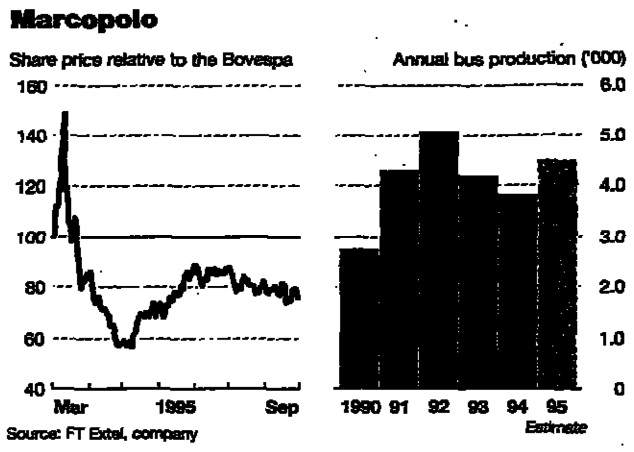
"These types of ideas have given us excellent results. They all reflect in the quality of the product," says Mr Valter Gomes Pinto, export director.

Marcopolo was founded in 1949 in Brazil's most southerly state of Rio Grande do Sul. The area has a strong industrial tradition due to widespread immigration last century from northern Italy. This pedigree allowed the company to weather competition from the industrially more powerful state of São Paulo, where most of Brazil's automotive industry is based.

Marcopolo builds and finishes bus bodies which it assembles on chassis built by Scania, Volvo and Mercedes-Benz. Unlike most of its competitors, it assembles a wide variety of products, from long-distance double deckers to articulated buses for city use. The company has right-hand drive models which it exports to former British colonies such as Guyana and Caribbean islands such as Jamaica.

The company's recent sales record is as bumpy as Brazil's economic performance. Sales slumped in 1990 following a government anti-inflation plan which triggered a recession, but picked up in the next two years, before political uncertainty led to a 25 per cent fall in production throughout the industry in 1993.

Marcopolo



Source: FT Extel, company

However, with growing optimism about the economy following the introduction of an inflation-beating currency, the Real, last year, Marcopolo is forecasting a jump in production to 4,500 units this year, from 3,828 units last year. Turnover is forecast to reach R$220m (US$230m), compared with R$207m. If the targets are hit, it would be Marcopolo's best performance since 1992.

According to analysts, it may take time for this improvement to trickle down to shareholders. Marcopolo booked a net loss of R$1.9m last year after being affected by currency losses and wage rises. The company is expected to return to profit this year with forecasts ranging from R$5m-R$12m, giving earnings per 1,000 shares of between R$7-R$18. The range of forecasts for 1996 is narrower, with analysts pencilling in profits of R$18m-R$20m.

Mr Pedro Zinner at Banco Icatu, whose forecasts are at the bottom end of the range for both years, says results for this year will continue to be dragged down by the government's economic policies. The Real has been allowed to appreciate against the dollar, hurting export competitiveness, and credit is being kept tight to damp down inflation.

"The one positive point is the election next year, when there should be an increase is vehicle sales ahead of the elections," he says. Next year sees municipal polling throughout Brazil and outgoing mayors will be keen to use up their budgets, buying equipment such as buses, trying to elect their successors.

After years of erratic growth, companies such as Marcopolo are well placed if the economy is kept on course. Brazil's bus companies have often delayed their investment decisions, leaving the country's bus fleet old by international standards, with an average age of 7-8 years.

"The domestic market is growing very quickly after bus fares were increased in June, prompting bus companies to start buying. But they are renewing their fleets, not expanding," says Mr Gomes Pinto.

However, with the government's finances stretched, there is little immediate chance of Brazil investing in its overstretched urban infrastructure. With metro and overland train projects stalled, because financing has run out, commuters will continue to push and shove to get on to Marcopolo's buses.

While first-half sales to the domestic market reached R$85.9m, compared with R$128.4m for the whole of 1994, first-half exports managed only R$24.4m, less than a third of 1994 exports of R$86.3m. Seasonal factors will improve the second-half performance but overall exports are likely to be disappointing.

In the meantime, Marcopolo is preparing for its next quality challenge and hopes to win the ISO 9000 mark, the international quality standard, next year.

To the Japanese techniques in place, including just-in-time delivery and feedback from workers, the company has added a system of red, orange and green tags which function like traffic lights to show the performance of each stage of the production process.

If a particular process is going well, it is awarded a green tag with a smiling face. Problems show up across the factory floor with angry red faces. The same system is used to map the emotional state of each worker, says Mr Gomes Pinto.

"Each morning the worker chooses a red, orange or green tag. If he has a problem, his wife is ill for example, the problem is sorted out and someone from the social assistance department can visit her, or he can be sent home," he explains.

After years of flashing lights in the Brazilian economy, Marcopolo is hoping the recent green light of growth will last.

Harrell named head of Tamla Motown

By Alice Rawsthorn

PolyGram, the world's largest music group, has appointed Mr Andre Harrell as president and chief executive of Tamla Motown, as part of its efforts to rejuvenate the famous record label.

Mr Harrell, 35, is one of the music industry's most successful executives. He founded Uptown Entertainment, part of the MCA Music group, in 1986 and has since nurtured a series of successful rap and soul artists, including Mary J. Blige, Heavy D and Jodeci.

His appointment is a critical part of PolyGram's efforts to revitalise Tamla Motown, bought from Boston Ventures, a private investment group, for $301m two years ago.

Mr Harrell is replacing Mr Jheryl Busby, 48, who was chief executive of Motown at the time of the acquisition. Mr Clarence Avant remains chairman of Motown. Mr Berry Gordy, the label's founder, will continue as chairman emeritus. Mr Harrell will report directly to Mr Alain Lévy, chairman of PolyGram.

Tamla Motown, founded in 1959, is still best known for the artists who emerged in the 1960s and 1970s, such as Diana Ross, Stevie Wonder and The Temptations.

The Motown back catalogue is one of the most valuable in the music industry and Motown has developed a few successful new acts, notably Boyz II Men, who have sold more than 10m copies of their latest album.

However, it has lost market share to the new generation of African American record labels that have tapped into new genres of music, such as rap and hip hop.

Mr Harrell began his music career at 15 by forming a rap duo, Dr Jekyll & Mr Hyde, with a school friend. He studied for a degree in business management before joining Rush Communications, an entertainment company run by Mr Russell Simmons, another African American music executive.

Mr Simmons's RAL/Def Jam record label was bought by PolyGram for $33m last year. Three years later he was hired by MCA to launch Uptown.

El Paso Electric plans capital reorganisation

El Paso Electric has filed a plan of reorganisation to reduce its total debt by about $800m, allowing the US utility to emerge from bankruptcy during the first quarter of 1996, Reuter reports from El Paso.

El Paso's capital structure will consist of $1.2bn in senior secured debt, including $200m of pollution control bonds, $100m of preferred stock and common shares.

The plan includes two alternatives for emerging from bankruptcy, the company said. Under the first, the company would use proceeds from an underwritten public offering of mortgage bonds to repay the claims of existing secured secured creditors in full.

If market conditions would not permit an offering, the company would distribute new senior secured debt to existing secured creditors in the amount of the claims.

Unsecured creditors would receive about $150m in cash, $450m of new secured debt, $100m of preferred stock and 85 per cent of the reorganised company's common stock.

Banks sell branches ahead of merger

By Maggie Urry in New York

Fleet Financial and Shawmut National, two New England banks currently working on completing a $3.4bn merger announced in February, have found buyers for 64 branches they had been required to sell by the competition authorities.

The two banks said in August that the substantial overlap between their operations, especially in Connecticut and Massachusetts, had caused the state authorities, the Federal Reserve Bank and the US Department of Justice, to require disposal of the branches.

Fleet said yesterday that the agreement to sell the branches, "satisfies a major requirement for Federal Reserve approval of the pending merger". The merger is expected to be completed early next year.

The branches, in Connecticut, New Hampshire, Massachusetts and Rhode Island, account for $2.9bn in deposits and $1.7bn in loans. Following the sales, the combined bank is expected to have assets of $81bn, with deposits of around $50bn.

The branches are being sold in parcels with Webster Financial, a Connecticut based bank, buying the largest group of 20.

The price Webster is paying will be calculated at 6.25 per cent of the deposits the branches have at closing. They currently have deposits of $1bn, suggesting a price of $62.5m, but it is expected that the deposits will have fallen by the completion date, perhaps to $900m.

As part of the consideration Webster is giving two of its branches to the combined Fleet/Shawmut.

Webster plans a $27m share offer to help finance the purchase, which will make it the second largest Connecticut-based bank with 63 branches.

Deal and restructuring costs will cut £95m from 1994-95 results

Lucas pays Washington $88m

By Paul Cheeseright, Midlands Correspondent

Lucas Industries, the automotive and aerospace systems maker, is to pay the US government $88m to settle a dispute which has led to it being barred from taking any new defence contracts with the Pentagon. It will be taken as an exceptional item of £55m in its 1994-95 accounts.

The group is also making a provision of £40m to cover the restructuring of Lucas Western Geared Systems, the subsidiary involved in the Pentagon dispute, and its eventual disposal.

Before the provisions pre-tax profits for the year to July 31, to be announced next Monday, were expected to be between £130m and £135m.

The settlement had been awaited for some time but the cost is greater than expected.

A year ago Lucas made provisions of £87.6m for restructuring and US contract claims, without specifying the breakdown. Last March it said it had no intention of making any more provisions.

Lucas said yesterday there had been strong growth in continuing business and, exceptionals apart, profits would be in line with expectations.

The dispute with the US government hinged on the testing procedures for Lucas Western gearboxes supplied for US Navy F/A-18 aircraft. Yesterday Lucas said the equipment had exceeded performance requirements.

Last January it paid the US government a fine of $18.5m (£11.9m), a first call on the £87.6m provision in the 1993-94 accounts.

"The financial effect is out of all proportion to the issues involved but we believe this was the best settlement available," said Mr George Simpson, chief executive. Lucas Western accounts for less than 2 per cent of group sales.

George Simpson: best settlement available

Aran Energy valued at £280m against £161m offer

By Tim Burt

Aran Energy, the Irish oil exploration company fighting a £161m ($250m) bid by US rival Atlantic Richfield Corp (Arco), will today publish an independent valuation suggesting it is worth almost £280m.

The valuation, prepared by SSI, the US oil consultants, is expected to conclude the Dublin-based group could be worth at least £1 a share, against the 61.4p offered by Arco.

SSI was yesterday said to have drawn on new information provided by Aran's oil production partners in reaching the valuation, which has been endorsed by its financial advisers, Morgan Grenfell, Morgan Stanley and the Investment Bank of Ireland.

Aran also hinted the report would show the value of the company's 22m barrel share in the Schiehallion field, off the Shetland Islands, was larger than thought.

Arco refused to comment in detail until it had studied the valuation report. But the company said reports of a £1-a-share valuation were fanciful and warned it would consider increasing its offer only if there were some hard figures to support Aran's claims.

Arco said Aran's forecasts would need to be corroborated by British Petroleum, which first discovered the Schiehallion field. Some analysts questioned Aran's expectations.

"They must be including a significant amount of value for exploration potential, which most analysts would regard with some suspicion," said one. Another said that at £1 a share, more than 40p of Aran's valuation would depend on untapped reserves.

First Choice warns but plans buys

By David Blackwell

First Choice, the UK's third largest tour operator, yesterday launched a £44.1m ($68m) rights issue and announced three acquisitions after warning that the peak August season "fell off a cliff."

Profits would fall to "no less than £1m" for the year to the end of October, the group forecast. This compares with £16.3m previously and City forecasts of about £20m. The shares shed 18p to close at 70p.

Thomas Cook, the biggest shareholder with a 21 per cent stake, will not be taking up the 2-for-5 rights issue at 60p a share and will end up with a holding of about 14 per cent.

First Choice will use the proceeds both to strengthen its balance sheet and to finance three acquisitions. The main one is Skibound, which is the leading operator of school and group ski holidays and is costing a maximum of £26m.

It is also acquiring JWT Holidays for I£5.3m, giving it market leadership in the Republic of Ireland, and the outstanding interest in Fiesta West for C$18m.

Sales growth lifts Ricardo to £6.16m

Ricardo, the engineering services group, yesterday reported a 38 per cent rise in annual pre-tax profits from £4.46m to £6.16m ($9.5m), writes Christopher Price.

The group, which specialises in providing engineering services for the automotive industry, increased turnover 36 per cent to £85.9m (£62.9m), fuelled by strong organic growth in its core business.

Sales from the automotive division rose 89 per cent to £58.6m, which included the first full-year contribution, worth £20m, from transmission manufacturer FFD.

Mr Christopher Ross, chief executive, said that the two main drivers of the automotive business were legislation affecting vehicle design and production, such as tighter emission controls, and demand from manufacturers for ever greater vehicle refinements.

This trend was being seen in the first half of the year as well.

The design division, which provides services to the aerospace and power industries, was affected by tough trading conditions and turnover fell 14 per cent to £27.3m (£31.9m). Mr Ross said that the outlook for the division remained "unexciting".

Hicking Pentecost buys Blue Mountain for $22.5m

Hicking Pentecost, the Cardiff-based textile and industrial products group, is to buy Blue Mountain Industries, the US specialist industrial thread manufacturer, for $22.5m, writes Jane Martinson.

The deal reunites Blue Mountain with Barbour Campbell, the specialist thread manufacturer bought by Hicking Pentecost for £5.33m in May 1994.

Blue Mountain used to be part of the Barbour group and still uses the Barbour name and logo. Mr Tudor Davies, Hicking's chief executive, said the two companies had begun to compete in the Chinese market, which was "becoming a source of concern".

ECC buys Redland interests in Maryland

By Andrew Taylor, Construction Correspondent

Redland, one of Britain's biggest building material groups, yesterday announced the sale of two raw material businesses supplying the paper and paint industries.

Redland said the US and UK businesses were no longer regarded as central to its core operations.

English China Clay is buying for $35m, plus provision of working capital of $4m, the calcium carbonates interests of Genstar Stone Products, a Redland subsidiary in Maryland.

Redland previously had been negotiating the sale of the Maryland business to Mineral Technologies of the US but this deal had fallen through.

Seperately, the Goonvean & Rostowrack China Clay company has paid £8.2m for Redland's china clay operations near St Austell, Cornwall. The operation produces about 120,000 tonnes a year.

Mr Paul Hewitt, finance director, said Redland's share of the china clay market was small.

Bradstock buy

Bradstock, the insurance broker, is paying £2.5m to acquire Cullis Raggett another broker, as part of a link-up with a Malaysian financial services and industrial group.

Cullis Raggett is a broking subsidiary of an affiliate of Malaysia's Hong Leong Group, which has interests in insurance, banking, stockbroking and industrial businesses. Bradstock has also signed a joint venture agreement with Hong Leong Credit part of the Hong Leong Group, to develop insurance and reinsurance broking business in east Asia.

As part of the deal, Hong Leong Credit will become a 4.7 per cent shareholder in an enlarged Bradstock group, becoming the London-based broker's third largest shareholder.

Trade Indemnity

Trade Indemnity, the credit insurance company, has opened its first continental European office, in Milan, in an effort to expand its international client base and reduce the risk of insuring exports to Italy.

In its 1994 annual report, Trade Indemnity said that "the worst claims experience" for export clients arose in Italy, France and Spain.

It also plans to co-operate with Italy's main domestic credit insurance company in assessing risks for UK and Italian clients.

Two more continental European offices are planned, in France and Germany, to add to branches in Australia, New Zealand and Canada.

LBMS joins Nasdaq

Learmonth & Burchett Management Systems is to make a US public offering of at least 5m new and existing ordinary shares on Nasdaq. The offer will be priced in the week beginning November 13.

The primary offering will be of at least 2.5m new ordinary shares. The secondary offering will comprise the sale of 1.5m shares by Mr Rainer Burchett, chairman, and 1m shares by Mr Roger Learmonth, non-executive director. Both will retain substantial shareholdings in the company.

Polypipe purchase

Polypipe, the building materials manufacturer, has bought Sud Ouest Plastiques for a maximum of FFr16.3m. The initial payment is FFr14.8m cash, with a further payment of up to FFr1.5m subject to the settlement of certain amounts due to SOP.

Ceridian buys payroll services from NatWest

By John Gapper, Banking Editor

National Westminster Bank is selling part of its computer services subsidiary Centre-file in a further effort to concentrate capital on a smaller range of businesses.

NatWest will sell the Personnel and Payroll Services (P&PS) division to Ceridian Corporation of Minneapolis for £33.1m ($51m) cash. It also intends to sell other businesses which are part of the Centre-file subsidiary, including the K3 Group, a supplier of business systems to building societies and insurance companies.

NatWest said that most of Centre-file's 1,200 staff would be transferred with their businesses, although there were likely to be some job losses.

P&PS has about 5 per cent of the UK market in payroll services for companies.

Ceridian, which is likely to have a 1995 turnover of £800m, was formed in the restructuring of Control Data Corporation in 1992. Its subsidiaries include Ceridian Employment Services and Computing Devices International.

Mr Lawrence Perlamna, Ceridian's chairman and chief executive, said this was its first purchase of a human resources company outside the US.

Melrose turns in £5.65m

By Jane Martinson

Full-year pre-tax profits at Melrose Energy, the oil and gas exploration group, jumped from £1.21m to £5.65m ($8.75m).

The company was formed in March 1995 after Crossroads Oil bought the 55.6 per cent of Melrose it did not already own.

Sales almost trebled to £6.65m (£1.71m) in the year to June 30 while operating profits rose to £5.68m (£1.2m).

LEX COMMENT

First Choice

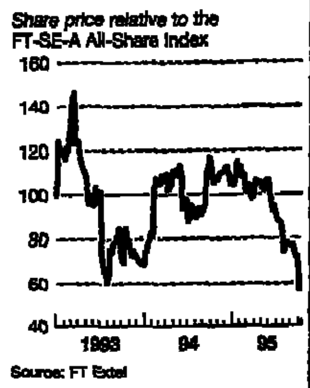
In the last two years, the new management at First Choice Holidays has rebranded the business, softened its seasonal bias and cut back costs – all sound moves. But a fundamental problem remains. The tour operator is still highly vulnerable to sales during a six-week period. And during the key month of August, competitive pressure, and therefore discounting, cost the company some £15m in profits. The result will be a small loss before one-off items for the current year, versus expected profits of up to £20m. Had it not been for recent acquisitions in Canada, First Choice would have lost £8m more.

The management claims that next year will be different. It is cutting capacity by 9 per cent, and other market leaders promise similar reductions. This is vital if the industry is to achieve the 8 per cent price rises it is imposing on 1996 holidays to claw back rising costs.

Yet First Choice is also expecting further increases in market share, suggesting the intense competition of the past two years is far from over.

First Choice Holidays

Share price relative to the FT-SE-A All-Share Index



Source: FT Extel

If investors take up their rights, they will in effect be paying 17p for every 100p of First Choice revenues, implying considerable potential upside.

However, Thomas Cook will not help. Having turned down its rights, it is likely to sell its 14 per cent stake when conditions improve, which would depress the share price. Meanwhile, another bad summer could mean another rights issue. But, for those willing to take a gamble, the rewards probably outweigh the risks.

Chiroscience near to drug deal

Chiroscience, the biotechnology company, is in late-stage talks for an agreement with a "major pharmaceutical company" to develop and market levoverapamil, a cardiovascular drug, writes Motoko Rich.

The announcement accompanied Chiroscience's interim results showing pre-tax losses widening from £3.75m to £5.52m ($8.55m). It also followed the agreement signed last month with Pharmacia, the Swedish pharmaceutical group, to develop and commercialise levobupivacaine, Chiroscience's long-acting anaesthetic.

The group also derived increased revenues from dexketoprofen, an anti-inflammatory pain treatment registered to Menarini, Italy's largest domestic drugs company.

Spending on research and development rose to £5.55m (£3.66m) to fund clinical trials, particularly on levobupivacaine. Spending also rose to fund a rise in the average number of employees during the half, from 120 to 163.

RESULTS

		Turnover (£m)		Pre-tax profit (£m)		EPS (p)		Dividends: Current payment (p)	Date of payment	Corresponding dividend	Total for year	Total last year
Ash & Lacy	6 mths to June 30	34.5	(30.6)	2.97	(2.02)	7.84	(5.2)	2.6†	Nov 18	2.5	-	6.4
Betacom	Yr to June 30	16.3	(13.5)	0.433♥	(0.203♥)	0.6	(0.3)	nil	-	nil	nil	nil
Bilton	6 mths to June 30	5.78	(5.88)	9.19	(9.06)	7.2	(7.1)	2.89	Dec 1	2.89	-	9.93
Brightstone	6 mths to June 30	0.57☐	(0.33☐)	0.145	(0.106)	1.53	(1.07)	1.25	Oct 27	1	-	2.8
British Dredging	6 mths to June 30	19	(18.7)	0.685♠	(0.858)	2.62	(3.28)	2.6	Dec 11	2.6	-	5.6
Chiroscience	6 mths to Aug 31	2.11	(0.757)	5.52L	(3.75L)	8.1L	(5.5L)	-	-	-	-	-
DCS	Yr to June 30	8.69	(6.38)	0.61♠	(0.43♥)	5.02	(4.32)	1†	Dec 4	0.5	1†	0.5
GPA ★	Qtr to June 30	244	(392)	146	(154)	-	(-)	-	-	-	-	-
Greenacre	6 mths to July 31	5.24	(4.52)	0.996	(0.873)	0.42	(0.35)	0.19	Nov 24	0.16	-	0.35
Groupe Chez Gérard	Yr to June 25	13.1	(10.2)	2.33	(1.67)	8.41	(7.28)	1.65	Nov 20	-	2.4	-
Melrose Energy	Yr to June 30	6.65	(1.71)	5.65	(1.21)	4.57	(1.62)	0.32	Dec 12	0.2	0.48	0.2
Moss Bros	6 mths to July 29	36.1	(30.1)	3.21	(1.92)	12.63	(7.6)	5	Nov 7	3	-	12
Oasis Stores	6 mths to July 31	24.6	(19.5)	2.61♠	(3.72)	2.42	(4.64)	-	-	-	-	-
Ricardo	Yr to June 30	85.9	(62.9)	6.16♠	(4.46)	9†	(8.4)	4.3	Nov 30	4	6.3	
Stylo	6 mths to July 29	77.9	(63.3)	0.561	(0.504)	1.86	(1.58*)	-	-	-	-	4.667*

Dividends shown net. Earnings shown basic. Figures in brackets are for corresponding period. ☐Net rental income. ♥After exceptional credit. ♠After exceptional charge. †On increased capital. *Equivalent after allowing for scrip issue. ★US currency.

INTERNATIONAL PEOPLE

Schmidt wastes no time at ISS

Wide ranging management changes have followed the arrival of Waldemar Schmidt as chief executive of ISS-International Service Systems on September 26. He succeeds Poul Andreassen, who built up ISS from a small Danish domestic company into the world's largest cleaning business.

Martin O'Halloran (above), 42, managing director of ISS UK since 1989, is going to New York as president and ceo of ISS Inc, the third ceo in New York in less than two years. He replaces Dennis Spina, an American brought in last year, who has resigned from the company.

Ken Pepper, 48, operations director and managing director of international operations at ISS Europe since 1989, takes over in the UK.

Schmidt is meanwhile joined on the parent company's management board by Joern Andersen, who becomes finance manager with effect from November, and Sven Ipsen, of ISS Scandinavia. Theo Dilissen, 42, will take over Schmidt's former position as managing director of ISS Europe when the regional offices are relocated from London to Brussels. *Hilary Barnes*

Simons bows out

Paul Simons, chairman of Woolworths, Australia's largest food retailer, is finally bowing out. Simons, one of Australia's most respected businessmen, joined Woolworths in 1954, and rose to become joint general manager in 1974. He resigned in 1978, and for the next eight years ran the Franklins chain of discount food stores. However, he returned to Woolworths as chairman in 1987, subsequently seeing it through a stockmarket flotation.

He had planned to retire earlier but Woolworth's management succession was disrupted when Harry Watts, Woolworth's managing director and Simons' successor, died unexpectedly of a heart attack in 1993. Reg Clairs, who took over Watts' role, has increasingly fronted the running of the business, and moved up to become chief executive a year ago. Simons plans to retire after the company's annual meeting in November. *Nikki Tait*

Changes at Paribas

Patrick Stevenson, a 50-year-old Frenchman who has been responsible for the growth of Paribas Capital Markets, has been appointed senior adviser to Banque Paribas' executive committee and chairman of Paribas Europe. Alec de Lézardière, head of equity and fixed income products, takes over as head of the capital markets department. Pierre Martinaud, head of business development, becomes head of human resources and is replaced by Luqman Arnold, head of investment banking. Jean-Benoit Henriet, head of human resources, takes over the securities services department and Philippe Blavier, head of the bank's north American operations, replaces Michel Barret as head of corporate banking. Barret takes charge of a new risk management department and Blavier is replaced in New York by Alain Louvel, head of commodities finance.

Nestlé's French moves

Nestlé has promoted Peter Blackburn (left), chairman and chief executive of its UK operations, to head its French business from next April. He replaces Yves Barbieux, who will take charge of the Italian subsidiary on the retirement of Giancarlo Salina. Blackburn's role in the UK will be filled by David Harris, managing director of Nestlé's Rowntree confectionery division in York.

Blackburn was chairman of Rowntree Mackintosh's UK business when Nestlé launched a hostile and ultimately successful bid for it in 1988. He fully expected to be fired once the Swiss group took control, he said later. Instead, he was put in charge first of Rowntree and then Nestlé's global confectionery strategy group before becoming UK chairman and ceo in 1991. *Roderick Oram*

ON THE MOVE

■ Dominique Chauvin, president of Agco International, is rejoining Varity Corporation as chief executive of Kelsey-Hayes, its automotive products subsidiary.

He succeeds Edward J. Gulda on November 1. Chauvin was chief executive of Massey Ferguson until Varity sold it to Agco last year.

■ Carl Eric Stalberg, chief financial officer of Swedbank, the big Nordic bank, is leaving to become president of JM Byggnads Och Fastighets, a Swedish construction company. Stalberg takes up his new post in early 1996.

■ Nicholas L. Trivisonno, 48, former head of strategic planning at GTE Corporation, takes over from Edwin A. Bescherer as chief financial officer of Dun & Bradstreet Corporation. Bescherer is retiring after 40 years with the information group.

■ Antoine Jeancourt-Galignani, chairman of Assurances Générales de France, the state-owned insurer, has replaced Jean Taittinger as chairman of Euro Disney's supervisory board. Taittinger remains on the board and Phillipe Labro, head of programmes at France's RTL radio network, is also joining the supervisory board.

■ Jon Hartley, former head of development capital at Lend Lease, replaces Murray Bolton as chief executive of Brierley Investments' New Zealand activities.

■ Jean-Pierre Halbron, 59, a former finance director of Total, has replaced André Wettstein as chairman and chief executive of Alcatel Alsthom's Electro Banque subsidiary. Halbron was chief executive of Compagnie Financière between 1974 and 1982 and became finance director of Rhône-Poulenc in 1983. Since then he has worked for CdF Chimie, Total and Wasserstein Perella. He was appointed Alcatel Alsthom's director strategy and finance in July.

■ Thomas J. Sheehan, president of Delco Electronics Asia/Pacific, has returned to the US as chief operating officer of Delco Electronics, General Motors' electronic components arm. William C. Spelman, who has worked for Delco for 20 years, replaces him at Delco's regional headquarters in Singapore.

■ Francois Maire has been appointed chairman of ATT France.

■ Christopher Roberts, Credit Suisse's North American head, joins Credit Suisse's executive board on January 1. He will assume responsibility for commercial banking in North and Latin America from Beat Fenner who will take charge of business in Eastern and Central Switzerland. Manfred Adami is resigning from the executive board for health reasons.

■ Patrick Fincker, previously with Crédit Lyonnais in Paris, and Michael Kremer, a Deutsche Bank executive, are joining BfG Bank, Crédit Lyonnais' German subsidiary. Fincker will be responsible for trading and Kremer will take charge of real estate customer business.

■ Hans-Olov Olsson, 54, succeeds Helge Alten as head of Volvo Car International, which is responsible for Volvo sales outside Europe and North America. Alten has moved to Volvo Cars of North America.

■ Theo de Raad, 50, and Jan Piet Fokker, 53, have been named chairman and vice chairman of SHV Makro, the consumer wholesaling arm of the privately-owned Dutch group. Both are members of SHV Makro's executive board and take up their appointments on January 1 1996 when Folkert Schukken, 59, retires.

■ Ruth Markland has been appointed the first managing partner of the Asian offices of Freshfields, a London law firm. Markland, a partner since 1983, takes over from Mark Freeman as partner in charge of the Hong Kong office January 1 1996.

■ Laurence Crowley takes over from Margaret Downes as deputy governor of the Bank of Ireland.

■ Paolo Vigitello has been appointed general manager of the Valentino clothing group. He was previously a senior manager at GFT (Gemina Group).

International appointments

Please fax announcements of new appointments and retirements to +44 171 873 3926, marked for International People. Set fax to 'fine'.

LAW

Decision on aid annulled

EUROPEAN COURT

A European Commission decision clearing the French government of granting state aid to Sécuripost, a post office security company, has been annulled by the European Court of First Instance. The court ruled the decision was inadequately reasoned. Therefore it could not support the Commission's conclusion.

Sécuripost was formed in 1987 by a commercial subsidiary of the state-owned French post office to provide a secure means of transporting money and other protection services. The post office seconded over 200 officials to the new company, and between 1987 and 1989 it advanced to it, through a subsidiary, sums totalling some Ecu8m.

In 1989 a group of French companies complained to the Commission that these measures constituted unnotified and unlawful state aid.

Following a 29-month investigation, the Commission adopted a decision rejecting the complaint. The companies brought an action before the Court of Justice, but it was dropped when the Commission withdrew its decision. The Commission registered the measures taken by the French government as unnotified aids in early 1993, but in December that year it adopted a second decision, again rejecting the companies' complaints, and held there had been no grant of state aid.

The companies challenged this decision before the Court of First Instance alleging, among other things, infringement of the right to an adequate statement of reasons and manifest error of assessment.

The court said that the statement of reasons required under the treaty must disclose in a clear and unequivocal fashion the reasoning followed by the decision-making authority. The adequacy of the reasoning must also be assessed with regard not only to its wording but also to its context and to all the legal rules covering the matter in question.

The court said that the long time taken to adopt the contested decision, the correspondence which had taken place between the Commission and the parties, the adoption of the initial decision by the Commission and the registration of the measures as unnotified aids were all relevant to the context of the contested decision.

The court then examined the Commission's reasons. It found some of the reasoning inadequate in four areas: the secondment of staff; the favourable terms on which post office premises had been made available; the fuel and vehicle maintenance cost incurred by Sécuripost; and loans made by the post office to Sécuripost.

The court said the Commission was obliged to give a reasoned answer to each of the objections raised in the complaint. Since it had not, the contested decision was vitiated in each respect.

On the question of manifest error of assessment, the court noted the applicants' submission that the prices charged by Sécuripost to the post office were higher than those normally charged in that sector.

The Commission had sought to meet that objection by means of a comparison with a contract awarded to Sécuripost for transporting money for the Casino shops chain. However, the court found that evidence inadequate because it dealt with only one year, 1993. The court therefore raised the issue of a lack of reasons on this point, and concluded that the contested decision was inadequately reasoned.

The court concluded that it was not open to the Commission to rely on the alleged flimsiness of evidence put forward by the complainants in order to justify the inadequacy of its reasons for a decision. It said the Commission had at its disposal more effective means of gathering the information necessary for a detailed, impartial investigation than complainants, and that the Commission's obligation to state reasons for its decisions may in certain circumstances require an exchange of views and arguments with the complainant.

T-95/94: Sytraval and Brink's France v Commission, CFI 4CH, September 28 1995.

BRICK COURT CHAMBERS, BRUSSELS

COMMODITIES AND AGRICULTURE

Industry laments demise of the US Bureau of Mines

By Kenneth Gooding, Mining Correspondent

The global mining industry was yesterday lamenting the forthcoming closure of the US Bureau of Mines, which during the past 85 years has developed a pool of expertise and access to mineral information that has been unrivalled.

The US Congress has voted to close the bureau. Some of its operations will be transferred to other organisations but important environmental and remediation and pollution prevention research will be ended. Some $64m has been allocated to cover the cost of closure and about 1,100 jobs will be lost.

This has produced an angry reaction from the industry outside the US. "It is tragic that an organisation with such a long and illustrious history and one that has been so beneficial to the US – and world wide – should be destroyed for short term budgetary reasons," said Mr Philip Crowson, chief economist at RTZ, the world's biggest mining company. "Once an organisation like this is closed if is difficult, if not impossible, to recreate it again when you need it and the US will live to regret this action."

At Mining Journal, the international mining industry's "trade paper," Mr Roger Ellis, the editor, said: "The bureau is in the vanguard of the world's mining research establishments and, if it is dismantled or dispersed, we will all be the poorer. Although established to help the US solve its own problems, the bureau has benefited us all"

In a hard-hitting commentary, the Mining Journal suggests that the US is struggling to balance the conflicting demands of its voracious appetite for minerals and the need to protect the environment from some of the more pernicious side effects of mining, processing and fabricating minerals.

"If it had not already been invented, the US government should surely now be considering the establishment of an agency to help reduce the cost (in all its guises) of meeting the country's need for minerals. And yet, far from applauding its own good fortune in establishing such an organisation fully 85 years ago, the US Congress has decided it should be abolished."

Announcing the closure, the US Interior Department said that some of the bureau's functions, primarily related to health and safety research and materials partnerships, are to be transferred to the US Geological Survey. The Bureau of Land Management will take over Alaska minerals assessment.

"The remainder of the Bureau's programmes, including important environmental remediation and pollution prevention research, will be ended. Most activities are to close within 90 days of the legislation being enacted."

In theory, President Clinton has the right to veto the Congress's decision, but most observers suggest he is unlikely to do so.

Doubts over durability of wood pulp price increases

By Bernard Simon in Toronto

North American and European wood pulp producers have carried out plans to raise list prices to new record levels this week, despite signs of a fragile market.

Analysts said they expect some discounting in coming months, especially in hardwood pulp used mainly for high-quality printing and business papers.

Pulp prices have soared over the past two years since touching a low of $390 in late 1993. Producers took advantage of frenetic demand last spring to announce an increase in northern bleached softwood kraft pulp (NBSK), the industry staple, to $985-1,000 per tonne on October 1 from $925. Similar increases were announced for other grades.

Some European and North American customers have agreed to the price hikes. But Mr Rodney Young, president of Resource Information Systems, a US consultancy, predicted that the market will remain "pretty weak" for the rest of the year.

Mr Roger Wright, a London-based consultant, described the market as "finely balanced". Pulp shipments remain high, with producer inventories virtually unchanged in recent months.

Scandinavian and North American producers' stocks edged up by only 15,000 tonnes in August to 1.27m tonnes. Demand may have been sustained by paper mills' efforts to build up their own inventories ahead of this week's price hike.

Orders for most grades of paper have softened, prompting predictions that paper mills will soon start cutting back their raw material orders.

Mr Young described the current fragility as a temporary setback. He predicted that demand will pick up again in early 1996, as economic growth accelerates in the US and Europe.

Sanyati copper mine starts up

The Sanyati copper mine in Zimbabwe operated by UK-based Reunion Mining is up and running and will be producing Grade A copper in the next few weeks, Mr Andrew Woollett the company's chairman has announced, Reuters reports.

Using low cost (solvent extraction-electrowon technology for leaching the oxide deposit, Reunion's operating costs will be less than 50 cents per pound, Mr Woollett said at the Global Emerging Markets 1995 conference.

Sanyati will be producing at its rated capacity of 5,000 tonnes a year immediately, with the mine having an eight to 10 year life.

Sanyati's reserves are 5.5m tonnes of ore grading at 1.1 per cent copper. The cost of bringing the mine into operation was $14m.

When the oxide operation is exhausted, Reunion will exploit sulphide deposits at Sanyati which will add a further 20 years to the project life.

Additional revenues will come from by-product zinc, cobalt and manganese. These provide zinc metal, cobalt oxide and manganese dioxide at low operating costs.

Reunion, which is currently listed in Luxembourg, will be seeking a listing on the London Stock Exchange soon, he told the conference.

FT Gold Mines Index

From today the Financial Times Gold Mines Index will includeprice-earnings ratios for the gold producers. At the same time, South African companies' earnings will be adjusted to make them comparable with gold mining groups elsewhere in the world.

Foresters who feel themselves being thrown to the wolves

Alison Maitland on the long-term timber supply crisis facing the UK

Twenty-five years is a short time in forestry. That is why the UK timber industry is calling for action now to avert a supply crisis around the year 2020. The amount of home-grown timber coming on to the market will be falling by then, after reaching a peak in the second decade of the next century.

The industry's fear is that the European, North American and New Zealand processing companies which have poured £1.3bn into new mills in the UK over the past decade could find themselves with vast unused capacity and decide to relocate elsewhere in the world.

"There's going to be a tremendous shortfall in timber production. We're going to need substantial tree-planting to keep the mills going, if we want to keep that investment in this country," says Mr Simon Vardon, a senior manager with Fountain Forestry, which handles 160,000 hectares in the UK and US for private and institutional clients.

The forestry industry is urging Mr Kenneth Clarke, the UK chancellor, to provide more favourable tax and investment treatment in next month's Budget to encourage large-scale new planting.

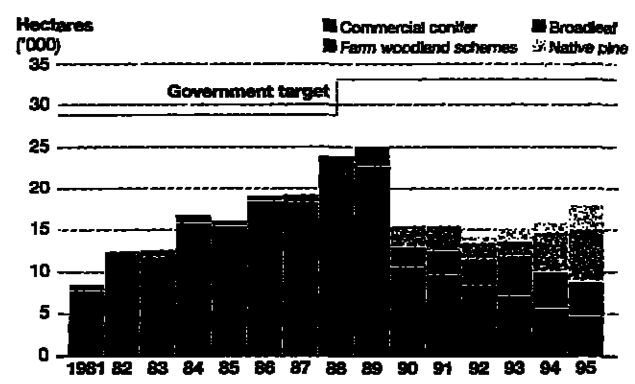
The number of commercial conifers planted each year has plunged since Mr Nigel Lawson, the then chancellor, abolished generous tax incentives in 1988. The move followed a public outcry at a system that allowed the wealthy to dodge tax while creating swathes of pine forest that many saw as an environmental disaster.

As a result, however, private planting of conifers for timber fell from about 23,000 hectares in 1989 to just over 2,500 hectares in the year to March 1995 (see chart).

It takes at least 35-40 years for a conifer to reach maturity. The Forestry Commission, which manages the country's 1.1m hectares of public woodland, says annual felling of 8m tonnes of timber now should reach 12.5m by 2010 as the forests planted after the second world war reach maturity.

Arguing from a situation of plenty is difficult. Mr Peter Johnson, chief executive of Tilhill Economic Forestry, which manages 150,000 hectares, or 12 per cent of privately held forests in the UK, says: "There are no votes in forestry for the government. Nothing's going to happen for 20 years. So they've thrown the industry to the wolves."

UK new private planting



Source: Booker Countryside (ref. Forestry Commission) Years ending March 31

The gains from forestry expansion would be considerable for the UK trade balance. Timber is the third highest import after cars and food. Wood imports cost £6.4bn last year, leaving a £4.2bn trade gap.

The country produces only about 12 per cent of its timber needs. This proportion could be doubled, according to the Forestry Industry Committee of Great Britain, which represents the timber supply chain from nurseries to newsprint makers. Only 10 per cent of Britain is planted with trees, but its mild, wet climate is ideal for production. Only Ireland and Portugal in the northern hemisphere have faster conifer growth.

The projected surge in supply in the next 15 years has encouraged hefty investment in state-of-the-art processing mills for paper and board over the past decade by big names such as Repola and Kymmene of Finland, which are merging, and Noranda, the Canadian resources group.

This has given the UK a competitive edge which pushed up exports to £2.3bn last year. Such gains could evaporate if supplies are allowed to plummet, says the industry.

Current plantings fall well short of the government's target of 33,000 hectares a year. Last year, when the government decided not to privatise the Forestry Commission, it offered a sop to the industry with a 10 per cent increase in grants towards new commercial tree-planting.

The Forestry Commission says that "all the indications are that commercial conifer planting is on the up" as a result of the new grants. But landowners and timber processors are sceptical about the long-term impact and complain the changes amounted to no more than "tinkering" by a cash-strapped government.

Sections of the industry acknowledge the government has tried to create a favourable investment climate through, for example, its farm woodland grant schemes introduced in 1989 and its successful effort to persuade the European Union to agree that set-aside land could be planted with trees from July this year.

But they argue that far more radical action is needed to meet the government's own targets.

Forestry is neither eligible for tax relief on investment nor subject to taxation at the time of sale. The Country Landowners' Association, which represents 50,000 landowners in England and Wales, wants foresters to be able to choose irrevocably either to be in the tax system – facing tax on receipts but relief on planting and management – or to opt out.

At Tilhill, Mr Johnson says people contemplating a 35 to 40-year investment "need something upfront." To calm environmentalists' fears of a repeat of the 1980s conifer eyesores, he argues that today's tight regulations on new plantations and woodland management would prevent this.

Others say forestry must be opened up to small investors. Prototype funds requiring as little as £1,000 have emerged in the past year. But Mr Ronnie Williams, executive director of the Forestry Industry Committee, complains that no market is yet available in the shares, and forestry unit trusts are barred from promoting themselves to new investors.

Mr George Dunn, economist for the Country Landowners' Association, says constant policy reviews are also discouraging when such a long-term investment is involved. "What we're saying to the government is: you've got to get it right and then leave it alone."

COMMODITIES PRICES

BASE METALS

LONDON METAL EXCHANGE

(Prices from Amalgamated Metal Trading)

■ ALUMINIUM, 99.7 PURITY ($ per tonne)

	Cash	3 mths
Close	1749.5-50.5	1782-83
Previous	1755-6	1787-8
High/low	1759/1758	1794/1776
AM Official	1758-58.5	1791.5-92.0
Kerb close		1776-77
Open int.	203,519	
Total daily turnover	47,313	

■ ALUMINIUM ALLOY ($ per tonne)

	Cash	3 mths
Close	1525-35	1565-75
Previous	1530-40	1570-80
High/low		
AM Official	1530-40	1575-80
Kerb close		1560-80
Open int.	3,023	
Total daily turnover	1,833	

■ LEAD ($ per tonne)

	Cash	3 mths
Close	597.5-98.5	612-13
Previous	604.5-5.5	618-9
High/low	603	617/612
AM Official	602.5-3.0	616.5-17.0
Kerb close		612-3
Open int.	31,505	
Total daily turnover	4,383	

■ NICKEL ($ per tonne)

	Cash	3 mths
Close	7955-65	8085-95
Previous	8275-85	8405-10
High/low		8390/8050
AM Official	8160-70	8275-80
Kerb close		8115-20
Open int.	41,829	
Total daily turnover	16,940	

■ TIN ($ per tonne)

	Cash	3 mths
Close	6265-75	6290-300
Previous	6405-15	6430-35
High/low		6420/6230
AM Official	6360-70	6390-400
Kerb close		6300-10
Open int.	19,426	
Total daily turnover	6,554	

■ ZINC, special high grade ($ per tonne)

	Cash	3 mths
Close	1001.5-2.5	1024.5-25.0
Previous	1011.5-12.5	1033-4
High/low	[illegible]	[illegible]
AM Official	[illegible]	[illegible]
Kerb close		[illegible]
Open int.	[illegible]	
Total daily turnover	[illegible]	

■ COPPER, grade A ($ per tonne)

	Cash	3 mths
Close	[illegible]	[illegible]
Previous	[illegible]	[illegible]
High/low	[illegible]	[illegible]
AM Official	[illegible]	[illegible]
Kerb close		[illegible]
Open int.	[illegible]	
Total daily turnover	[illegible]	

■ LME AM Official £/$ rate: 1.5855

LME Closing £/$ rate: 1.5880

Spot:1.5911 3 mths:1.5882 6 mths:1.5853 9 mths:1.5827

■ HIGH GRADE COPPER (COMEX)

	Sett price	Day's change	High	Low	Open int.	Vol
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

PRECIOUS METALS

■ LONDON BULLION MARKET

(Prices supplied by N M Rothschild)

	$ price	£ equiv.	SFr equiv.
[illegible]	[illegible]	[illegible]	[illegible]

Precious Metals continued

■ GOLD COMEX (100 Troy oz.; $/troy oz.)

	Sett price	Day's change	High	Low	Open int.	Vol.
Oct	382.2	-1.6	384.0	382.1	2,146	1,059
Dec	384.8	-1.7	386.8	384.7	98,055	11,765
Feb	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Apr	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Jun	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Sep	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Total					[illegible]	[illegible]

■ PLATINUM NYMEX (50 Troy oz.; $/troy oz.)

	Sett price	Day's change	High	Low	Open int.	Vol.
Oct	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Jan	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Apr	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Jul	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Oct	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Total					[illegible]	[illegible]

■ PALLADIUM NYMEX (100 Troy oz.; $/troy oz.)

	Sett price	Day's change	High	Low	Open int.	Vol.
Dec	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Mar	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Jun	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Total					[illegible]	[illegible]

■ SILVER COMEX (100 Troy oz.; Cents/troy oz.)

	Sett price	Day's change	High	Low	Open int.	Vol.
Oct	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Dec	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Jan	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Mar	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
May	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Jul	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Total					[illegible]	[illegible]

ENERGY

■ CRUDE OIL NYMEX (42,000 US galls. $/barrel)

	Latest price	Day's change	High	Low	Open int.	Vol
Nov	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Dec	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Jan	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Feb	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Mar	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Apr	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Total					[illegible]	[illegible]

■ CRUDE OIL IPE ($/barrel)

	Latest price	Day's change	High	Low	Open int.	Vol
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

■ HEATING OIL NYMEX (42,000 US galls; c/US galls.)

	Latest price	Day's change	High	Low	Open int.	Vol
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

■ GAS OIL IPE ($/tonne)

	Sett price	Day's change	High	Low	Open int.	Vol
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

■ NATURAL GAS NYMEX (10,000 mmBtu; $/mmBtu)

	Latest price	Day's change	High	Low	Open int.	Vol
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

■ UNLEADED GASOLINE NYMEX (42,000 US galls.; c/US galls.)

	Latest price	Day's change	High	Low	Open int.	Vol
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

GRAINS AND OIL SEEDS

■ WHEAT LCE (£ per tonne)

	Sett price	Day's change	High	Low	Open int.	Vol
Nov	114.70	-0.70	115.15	114.70	2,621	231
Jan	116.85	-0.75	117.50	116.85	1,735	152
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

■ WHEAT CBT (5,000bu min; cents/60lb bushel)

	Sett price	Day's change	High	Low	Open int.	Vol
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

■ MAIZE CBT (5,000 bu min; cents/56lb bushel)

	Sett price	Day's change	High	Low	Open int.	Vol
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

■ BARLEY LCE (£ per tonne)

	Sett price	Day's change	High	Low	Open int.	Vol
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

■ SOYABEANS CBT (5,000bu min; cents/60lb bushel)

	Sett price	Day's change	High	Low	Open int.	Vol
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

■ SOYABEAN OIL CBT (60,000lbs; cents/lb)

	Sett price	Day's change	High	Low	Open int.	Vol
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

■ SOYABEAN MEAL CBT (100 tons; $/ton)

	Sett price	Day's change	High	Low	Open int.	Vol
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

■ POTATOES LCE (£/tonne)

	Sett price	Day's change	High	Low	Open int.	Vol
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

■ FREIGHT (BIFFEX) LCE ($10/index point)

	Sett price	Day's change	High	Low	Open int.	Vol
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

SOFTS

■ COCOA LCE (£/tonne)

	Sett price	Day's change	High	Low	Open int.	Vol
Dec	884	-26	908	880	27,085	4,413
Mar	916	-23	937	913	30,672	3,484
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

■ COCOA CSCE (10 tonnes; $/tonnes)

	Sett price	Day's change	High	Low	Open int.	Vol
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

■ COCOA (ICCO) (SDR's/tonne)

Sep 29	Price	Prev. day
Daily	[illegible]	931.45

■ COFFEE LCE ($/tonne)

	Sett price	Day's change	High	Low	Open int.	Vol
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

■ COFFEE 'C' CSCE (37,500lbs; cents/lbs)

	Sett price	Day's change	High	Low	Open int.	Vol
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

■ COFFEE (ICO) (US cents/pound)

Sep 29	Price	Prev. day
Comp. daily	[illegible]	[illegible]4.00
15 day average	[illegible]	[illegible]21.31

■ No7 PREMIUM RAW SUGAR LCE (cents/lbs)

	Sett price	Day's change	High	Low	Open int.	Vol
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

■ WHITE SUGAR LCE ($/tonne)

	Sett price	Day's change	High	Low	Open int.	Vol
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

■ SUGAR '11' CSCE (112,000lbs; cents/lbs)

	Sett price	Day's change	High	Low	Open int.	Vol
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

■ COTTON NYCE (50,000lbs; cents/lbs)

	Sett price	Day's change	High	Low	Open int.	Vol
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

■ ORANGE JUICE NYCE (15,000lbs; cents/lbs)

	Sett price	Day's change	High	Low	Open int.	Vol
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

VOLUME DATA

Open interest and Volume data shown for contracts traded on COMEX, NYMEX, CBT, NYCE, CME, CSCE and IPE Crude Oil are one day in arrears.

INDICES

■ REUTERS (Base: 18/9/31=100)

Oct 2	Sep 29	month ago	year ago
[illegible]	[illegible]	[illegible]	[illegible]90.7

■ CRB Futures (Base: 1967=100)

Sep 29	Sep 28	month ago	year ago
[illegible]	[illegible]	[illegible]	-

■ GSCI Spot (Base: 1970=100)

Sep 29	Sep 28	month ago	year ago
[illegible]	[illegible]	[illegible]	[illegible]0.37

MEAT AND LIVESTOCK

■ LIVE CATTLE CME (40,000lbs; cents/lbs)

	Sett price	Day's change	High	Low	Open int.	Vol
Oct	63.925	-1.025	64.650	63.900	13,000	2,494
Dec	65.725	-0.925	66.500	65.700	26,144	3,993
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

■ LIVE HOGS CME (40,000lbs; cents/lbs)

	Sett price	Day's change	High	Low	Open int.	Vol
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Apr	47.000	-1.075	47.350	46.725	2,068	448
Jun	51.500	-0.850	51.850	51.175	2,483	355
Aug	49.700	-0.550	49.900	49.550	957	109
Total					32,955	6,744

■ PORK BELLIES CME (40,000lbs; cents/lbs)

	Sett price	Day's change	High	Low	Open int.	Vol
Feb	60.050	-0.975	60.700	59.200	5,441	1,031
Mar	60.150	-1.050	60.850	59.375	465	126
May	60.550	-0.950	61.300	60.000	97	5
Jul	62.425	-0.875	62.550	61.300	399	19
Aug	59.800	-0.900	59.800	59.500	33	2
Total					6,435	1,183

LONDON TRADED OPTIONS

Strike price $ tonne	Calls		Puts	
■ ALUMINIUM (99.7%) LME	Dec	Feb	Dec	Feb
1700	112	150	40	61
1800	60	98	87	107
1900	28	60	153	166
■ COPPER (Grade A) LME	Dec	Feb	Dec	Feb
2750	169	149	45	81
2850	109	99	84	129
2950	65	63	139	190
■ COFFEE LCE	Nov	Jan	Nov	Jan
2700	6	50	336	494
2750	4	44	384	538
2800	2	37	432	581
■ COCOA LCE	Dec	Mar	Dec	Mar
875	35	71	26	30
900	24	56	40	35
925	16	44	57	53
■ BRENT CRUDE IPE	Nov	Dec	Nov	Dec
1600	28	31	12	40
1650	7	20	37	70
1700	4	7	81	109

LONDON SPOT MARKETS

■ CRUDE OIL FOB (per barrel/Nov)

		+or-
Dubai	$14.91-5.01w	-0.085
Brent Blend (dated)	$16.55-6.59	-0.005
Brent Blend (Nov)	$16.15-6.16	-0.055
W.T.I. (1pm est)	$17.57-7.58w	+0.035

■ OIL PRODUCTS NWE prompt delivery CIF (tonne)

Premium Gasoline	$168-169	-5
Gas Oil	$150-151	-3
Heavy Fuel Oil	$84-86	
Naphtha	$151-153	-3
Jet fuel	$177-179	-0.5
Diesel	$154-155	-4

Petroleum Argus. Tel. London (0171) 359 8792

■ OTHER

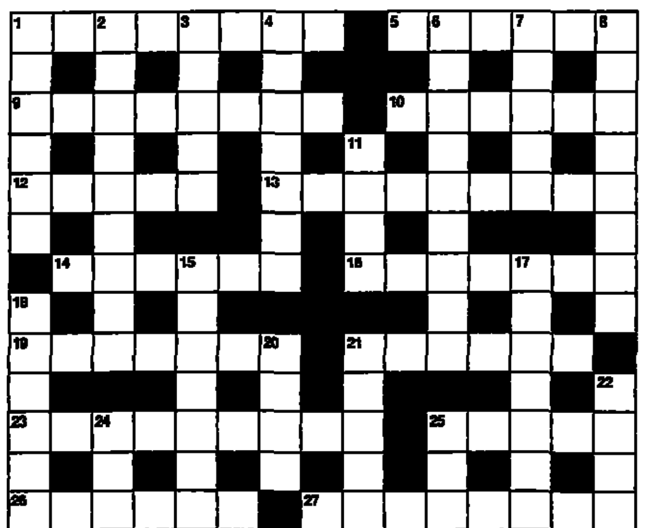
Gold (per troy oz)♣	$382.20	-1.55
Silver (per troy oz)♣	536.5c	-8.0
Platinum (per troy oz.)	$420.75	-2.75
Palladium (per troy oz.)	$141.50	-0.75
Copper (US prod.)	Unq.	
Lead (US prod.)	41.75c	
Tin (Kuala Lumpur)	16.02m	+0.01
Tin (New York)	299.5c	-6.0
Cattle (live weight)†	128.02p	-2.61*
Sheep (live weight)†♠	102.10p	-1.75*
Pigs (live weight)†	95.34p	-2.47*
Lon. day sugar (raw)	$288.10	-9.90
Lon. day sugar (wte)	$371.50	+0.50
Barley (Eng. feed)	£114.50x	
Maize (US No3 Yellow)	£104.0w	
Wheat (US Dark North)	Unq.	
Rubber (Nov)♥	69.00p	-0.75
Rubber (Dec)♥	69.00p	-0.75
Rubber (KL RSS No1)	337.5m	-1.0
Coconut Oil (Phil)§	$705.0u	+5.0
Palm Oil (Malay.)§	$615.0z	+5.0
Copra (Phil)§	448.0y	
Soyabeans (US)	186.0u	-2.0
Cotton Outlook 'A' Index	93.70c	-0.70
Wooltops (64s Super)	475p	

£ per tonne unless otherwise stated. p pence/kg. c cents/lb. r ringgit/kg. m Malaysian cents/kg. z Oct. u Nov/Dec. ♥ w Nov. y Oct/Nov. x Oct/Dec London Physical. § CIF Rotterdam. ♣ Bullion market close. ♠ Sheep (Live weight prices). * Change on week † Prices are for previous day.

JOTTER PAD

CROSSWORD

No.8,882 Set by DOGBERRY



ACROSS

1 Gem of a poet whose love's turned to fury (8)
5 Locate in total discharge (6)
9 Best part of holiday in confinement – between promontories? (8)
10 Man of rank: to wit? To wit, king (6)
12 Bore sick, pursuing medic (5)
13 Island-to-island cover against effect of sun (9)
14 Adulterate drink in spare room (6)
16 Divine purpose is just what one needed (7)
19 There's nothing ice can produce like a lot of water (7)
21 It's applied to thumbscrews while inquisitor questions (6)
23 Composer's quiet, therefore said to be idle (9)
25 Sect holding virgin leader to be god (5)
26 Such humour could cause friction with the Financial Times (6)
27 Seaman – one grabbed by Sikhs spoiling for a fight (8)
28 Integral points on flag (6)
29 Exiled from 'ere as punishment (8)

DOWN

1 Transfer to the south east and withdraw (6)
2 Come first, carrying 99 to base (9)
3 Resort left with poor accommodation (5)
4 Compiler in river turning to diet (7)
6 Little Prince and his wife act like Casanova? (9)
7 Unexpected development of dance (5)
8 Pickle turning boy into girl (8)
11 Very much at ease with arms raised (4)
15 Ferryman, one doomed to carry false idol (9)
17 Learning to put sport into print (9)
18 Swimmer turning professional in style (8)
20 Gloated at team (4)
21 Be amusing about river – not much of one (7)
22 Hamlet, say, containing pub nymph (6)
24 Small jumpers on top of the perch (5)
25 Sailor having afterthought about fish (5)

Solution to Saturday's prize puzzle on Saturday October 14.
Solution to yesterday's prize puzzle on Monday October 16.

INTERNATIONAL CAPITAL MARKETS

Treasuries rise on weak activity data

By Lisa Bransten in New York and Graham Bowley in London

US Treasury prices added to the sharp gains made on Friday after data on manufacturing activity was weaker than many economists expected.

Near midday, the benchmark 30-year Treasury was $\frac{32}{32}$ higher at 105$\frac{9}{16}$ to yield 6.447 per cent. At the short end of the maturity spectrum, the two-year note was up $\frac{1}{32}$ to 99$\frac{15}{16}$, yielding 5.767 per cent.

The strong gains by shorter-term securities led the two-year to 30-year yield curve to steepen by 3 basis points to 68 basis points in early trading.

Prices jumped at mid-morning after the National Association of Purchasing Management said its index of business activity in September came to 48.3 per cent. That was up from August's reading of 46.9 per cent, but below expectations of 50 per cent. A reading below 50 per cent is generally considered a sign of contracting manufacturing activity.

Adding to the good news for bond market investors were figures showing that construction spending slipped 0.2 per cent in August, partially reversing the 2 per cent increase posted in July.

However, bonds shrugged off signs that consumers may be about to add some life to the economy.

Figures from the Commerce Department showed that personal consumption jumped by 1 per cent in August, even as personal income held steady at July's level. Economists had forecast a 0.6 per cent increase in consumption accompanied by a 0.1 per cent gain in income.

The dollar lent some support to bonds by pushing back through the Y100 level and gaining against the D-Mark after sliding for most of last week.

In early trading, the US currency was changing hands at Y100.60 and DM1.4303 compared with Y99.73 and DM1.4278 late on Friday.

■ The stronger mood of US Treasuries and evidence of firmer official support for monetary union after the weekend meeting of EU finance ministers lifted European government bonds yesterday.

The largest gains were seen in the Spanish and UK markets, where economic data pointed to slower growth and lower inflation, raising the prospect that interest rates in these countries might soon be lowered.

GOVERNMENT BONDS

Only Italy and Sweden registered falls in their government bond markets.

Italian bonds were dogged by worries over the progress of the 1996 budget. Analysts said there was particular concern over former prime minister Silvio Berlusconi's response to the budget proposals.

German bunds lagged behind other European markets as the D-Mark weakened slightly against the US dollar.

■ In Spain, figures showed producer prices increased by only 0.1 per cent in July. The Spanish December futures contract rose 0.32 to 88.89. The 10-year bond yield spread over German bunds narrowed to 429 basis points.

In late trading, the Italian December futures contract on Liffe was down 0.21 at 101.29; the 10-year yield spread over bunds widened to 540 basis points from 528 points at the previous close.

■ In the UK, the September purchasing managers' index, which surveys business activity, fell to its lowest level for three years.

In late trading, the long gilt future on Liffe was up $\frac{21}{32}$ at 105$\frac{31}{32}$. The 10-year gilt spread over German bunds narrowed to 164 basis points from 169 points at the end of last week.

The yield spread over US Treasuries widened further to 200 basis points, however, from 181 points at last Monday's close.

Mr Julian Callow, international economist at Kleinwort Benson, said that "this now provides an opportunity for investors who are long of the US to switch into gilts".

He thinks that UK inflation is set to decline over the remainder of this year, which means that "gilts are likely to out-perform both Germany and the US". He said that this would also "favour conventional gilts over index-linked gilts".

However, Mr Paul Meader, director of fixed income at Matheson Investment Management in London, thinks that while the UK's favourable inflation and interest rate outlook makes gilts attractive, he prefers Irish gilts, which he says avoid the political risk which investors in the UK face.

■ *German financial markets will be closed today for the Unity Day holiday.*

Swedish bonds top performers last month

By Graham Bowley

Sweden was the best performing government bond market last month, according to J.P. Morgan's bond index. It posted a return of 3.96 per cent in local currency terms, in spite of uncertainty over European Monetary Union.

Japan was the second best performer, posting a total return of 3.17 per cent helped by an unexpected cut in the official discount rate from 1 per cent to 0.5 per cent.

Australia and Canada also performed well, registering total returns of 2.32 per cent and 1.52 per cent respectively.

"Investors sought to take advantage of a favourable outlook for inflation and fiscal restraint" in both these countries, the report says.

The row over the proposed European single currency, which erupted at the end of last month, caused a setback in high-yielding European markets, the index shows.

French government bonds were the hardest hit. France was the only market to register a negative total return last month, of minus 0.13 per cent.

"Political uncertainties, concerns about the lack of progress on the 1996 budget and growing doubts about France's ability to meet Emu's fiscal conditions contributed" to the decline, the report said.

US, German and UK government bonds under-performed the global index, which posted a return of 1.25 per cent.

German bonds registered a return of 1.15 per cent. UK gilts reacted poorly to the UK's first uncovered gilt auction, posting a return of 0.44 per cent. US Treasuries saw a total return of 0.89 per cent as "signs of stronger growth re-awakened memories of last year's global bear market", the report says.

First Polish GDR issues on the way

By Christopher Bobinski in Warsaw

Companies listed on the Warsaw Stock Exchange (WSE) are beginning to look to global depositary receipts (GDRs) to raise new capital, as is the government in pursuit of its bank privatisation programme.

At the end of last week, Stalexport, a listed Polish steel trader which is planning investments in the domestic steel industry, became the first company to obtain approval from the Polish Securities Commission (KPW) for a new share issue, which includes plans to raise capital abroad through GDRs.

Stalexport, whose 8.8m quoted shares are currently quoted at 32 zlotys ($12.8) on the WSE, is hoping to place 1m to 5m new shares with GDRs covering up to 25 per cent of its equity following the capital increase.

The company currently has a market value of 282.7m zlotys and is trading on a price/earnings ratio of 6.4.

The Stalexport issue, which opens on October 30 with HSBC Investment Services acting as lead adviser, is seen as a trial run for the privatisation of Bank Gdanski, in which shares are also to be offered to investors abroad through GDRs.

In the Bank Gdanski issue, due at the beginning of December and for which HSBC is also acting as the lead adviser, 75 per cent of the bank's equity is to be offered for sale, with a third of the total to be placed abroad.

HSBC is planning to build books abroad for both Stalexport, which wants to raise at least $50m for the modernisation of the Labedy and Ostrowiec Swietokrzyski mills as well as the Szczecin steelworks, and for Bank Gdanski. The book-building will help HSBC ascertain issue prices for domestic investors.

The government is hoping to raise in the region of $160m from the Bank Gdanski sale, with around half of the revenues coming from abroad.

Comalco NZ looks to long-term funding needs

Comalco New Zealand, the aluminium processor, has hired Ord Minnett Securities (NZ) to assist it in evaluating future long-term funding operations, the company said, AP-DJ reports from Wellington.

The company said that the funding would be related to the planned NZ$480m upgrade of its 79.4 per cent-wned Tiwai Point aluminium smelter located on New Zealand's South Island.

The remaining interest in the smelter is held by Japan's Sumitomo Chemical Corp. Comalco New Zealand is 100 per cent wned by the aluminium producer Comalco Australia which in turn is 67 per cent owned by the Australian mining concern CRA.

The market has been speculating on a possible flotation of Comalco shares sometime this year. But the company said such speculation was premature.

"Contrary to media speculation no decision has been made to seek listing on the New Zealand Stock Exchange," said Mr Kerry McDonald, managing director of Comalco. "We are considering a number of options and expect to make decisions by the end of the year."

Toyota Motor Credit set to launch $750m deal

By Antonia Sharpe

Toyota Motor Credit Corporation is set to launch its widely-expected $750m issue of five-year eurobonds today or tomorrow. The bonds are likely to be priced to yield about 22 basis points over five-year US Treasuries.

INTERNATIONAL BONDS

The deal, the biggest dollar-denominated corporate bond issue since March 1993, has attracted considerable interest and a large amount of bonds have been pre-placed. The issue is being arranged by Merrill Lynch, Nomura and SBC Warburg.

TMCC's offering is one of several big dollar deals which should emerge in the coming weeks. Italy is expected to raise $2bn with a five-year deal later this week, via Daiwa.

The offering, targeted at Japanese retail investors, will be in two tranches: about $1.5bn could be raised in the form of zero-coupon bonds with the remainder in coupon bonds.

Price talk on Italy's offering is aggressive. The zero-coupon bonds could yield 10 basis points less than Treasuries while the coupon bonds could offer only a nominal spread over Treasuries. However, worries that the bonds would yield well below Treasuries are said to be unfounded.

Asian Development Bank is close to launching its $750m 10-year global bond offering, via Daiwa and Morgan Stanley. The pricing of the bonds is expected to be close to the World Bank's 10-year global bond, which yields about 24 basis points over Treasuries.

Abbey National, which yesterday raised £300m through issues of undated bonds exchangeable for capital (X-Cap bonds) and preference shares, may also tap the dollar sector. It is considering raising $750m through a 10-year global subordinated bond under its US MTN programme. Goldman Sachs and Lehman Brothers are favourites to arrange the offering, which is likely to be priced to yield 60 to 65 basis points over Treasuries.

Merrill Lynch, which underwrote yesterday's transaction, said the preference shares sold quickly, helped by the decision to pay dividends gross of advance corporation tax, but the X-Cap bonds, a new instrument for many UK institutions, were taking longer to sell.

NEW INTERNATIONAL BOND ISSUES

Borrower	Amount m.	Coupon %	Price	Maturity	Fees %	Spread bp	Book runner
US DOLLARS							
Bayerische Hypobank(l)	200	6.125	99.84R	Nov.1999	0.225R	+17(l)	Paribas Capital Markets
Foreningsbanken(a)‡	100	(a1)	99.80R	undated	1.00R	-	JP Morgan Securities
D-MARKS							
Electricité de France	300	5.625	99.516R	Nov.2000	0.25R	+28(5¾%-00)	Banque Paribas (Deutsch.
STERLING							
Abbey National(b)	200	10$\frac{1}{16}$#	100.432	undated	1.00	+170(8¾%-17)	Merrill Lynch International
SWISS FRANCS							
Kingdom of Sweden	150	4.375	103.30	Nov.2002	2.50	-	UBS

Final terms, non-callable unless stated. Yield spread (over relevant government bond) at launch supplied by lead manager. ‡ Floating-rate note. #Semi-annual coupon. R: fixed re-offer price; fees shown at re-offer level. a) Callable on coupon dates from Nov.00 at par. a1) 3-mth Libor +125bp to Nov.00 and +275bp thereafter. b) Exchangeable at option of issuer into undated preference shares paying 10⅝%sa gross (initial coupon 8.3% net). l) Over interpolated yield. l) Long 1st coupon.

WORLD BOND PRICES

BENCHMARK GOVERNMENT BONDS

		Coupon	Red Date	Price	Day's change	Yield	Week ago	Month ago
Australia		7.500	07/05	93.3000	+0.500	8.52	8.75	9.17
Austria		6.875	08/05	99.2600	-0.030	6.98	6.93	7.01
Belgium		6.500	03/05	95.9100	+0.350	7.10	7.16	7.19
Canada *		8.750	12/05	107.4500	+0.850	7.88	7.86	8.31
Denmark		7.000	12/04	94.3400	+0.440	7.88	7.96	8.01
France	BTAN	7.750	04/00	103.7500	+0.250	6.75	6.84	6.62
	OAT	7.750	10/05	101.9900	+0.200	7.46	7.49	7.29
Germany Bund		6.875	05/05	102.0500	+0.270	6.57	6.58	6.70
Ireland		6.250	10/04	87.7500	+0.450	8.22	8.22	8.33
Italy		10.500	04/05	93.4400	-0.580	11.66†	11.50	11.25
Japan	No 129	6.400	03/00	120.2640	+0.240	1.53	1.60	2.30
	No 174	4.600	09/04	114.3940	+0.240	2.62	2.63	3.19
Netherlands		7.000	08/05	102.6400	+0.300	6.62	6.63	6.74
Portugal		11.875	02/05	103.7600	+0.410	11.16	11.29	11.32
Spain		10.000	02/05	94.6200	-	10.86	11.02	10.95
Sweden		6.000	02/05	79.3560	-0.250	9.41	9.72	10.20
UK Gilts		8.000	12/00	102-05	+14/32	7.48	7.57	7.67
		8.500	12/05	103-05	+20/32	8.04	8.01	8.08
		9.000	10/08	106-21	+18/32	8.16	8.10	8.16
US Treasury *		6.500	08/05	102-26	+20/32	6.11	6.28	6.57
		6.875	08/25	105-17	+32/32	6.45	6.60	6.90
ECU (French Govt)		7.500	04/05	98.4000	+0.460	7.73	7.87	7.66

London closing, *New York mid-day. Yields: Local market standard.
† Gross (including withholding tax at 12.5 per cent payable by nonresidents)
Prices: US, UK in 32nds, others in decimal. Source: MMS International

US INTEREST RATES

Latest

		Treasury Bills and Bond Yields			
		One month	5.43	Two year	5.85
Prime rate	8¾	Two month	5.48	Three year	5.92
Broker loan rate	7½	Three month	5.43	Five year	6.02
Fed.funds	5$\frac{13}{16}$	Six month	5.59	10-year	6.18
Fed.funds at intervention	-	One year	5.67	30-year	6.50

BOND FUTURES AND OPTIONS

France

■ NOTIONAL FRENCH BOND FUTURES (MATIF) FFr500,000

	Open	Sett price	Change	High	Low	Est. vol.	Open int.
Dec	115.38	115.50	+0.38	115.66	115.34	86,313	97,9761
Mar	114.76	114.82	+0.32	114.86	114.76	712	2,406
Jun	114.86	115.00	+0.40	115.06	114.86	597	678

■ LONG TERM FRENCH BOND OPTIONS (MATIF)

Strike Price	CALLS Nov	CALLS Dec	CALLS Mar	PUTS Nov	PUTS Dec	PUTS Mar
114	1.75	2.01	2.05	0.23	0.57	1.30
115	1.01	1.35	1.50	0.49	0.88	1.70
116	0.49	0.81	-	0.93	1.32	-
117	0.16	0.43	0.07	-	-	-
118	0.05	0.20	-	-	-	-

Est. vol. total, Calls 97 Puts 12,168 . Previous day's open int., Calls 106,273 Puts 125,845.

Germany

■ NOTIONAL GERMAN BUND FUTURES (LIFFE)* DM250,000 100ths of 100%

	Open	Sett price	Change	High	Low	Est. vol	Open int.
Dec	95.42	95.62	+0.35	95.68	95.41	103730	182112
Mar	95.00	95.05	+0.34	95.00	94.90	84	3458

■ BUND FUTURES OPTIONS (LIFFE) DM250,000 points of 100%

Strike Price	CALLS Nov	CALLS Dec	CALLS Jan	CALLS Mar	PUTS Nov	PUTS Dec	PUTS Jan	PUTS Mar
9550	0.57	0.85	0.74	1.04	0.45	0.73	1.19	1.49
9600	0.33	0.61	0.55	0.84	0.71	0.99	1.50	1.79
9650	0.18	0.42	0.40	0.66	1.06	1.30	1.85	2.11

Est. vol. total, Calls 15660 Puts 10613. Previous day's open int., Calls 186818 Puts 150843

Italy

■ NOTIONAL ITALIAN GOVT. BOND (BTP) FUTURES (LIFFE)* Lira 200m 100ths of 100%

	Open	Sett price	Change	High	Low	Est. vol	Open int.
Dec	101.80	101.41	-0.09	102.17	101.07	43665	45288

■ ITALIAN GOVT. BOND (BTP) FUTURES OPTIONS (LIFFE) Lira200m 100ths of 100%

Strike Price	CALLS Dec	CALLS Mar	PUTS Dec	PUTS Mar
10100	1.86	2.63	1.45	2.72
10150	1.60	2.40	1.69	2.99
10200	1.37	2.18	1.96	3.27

Est. vol. total, Calls 376 Puts 921. Previous day's open int., Calls 33536 Puts 33904

Spain

■ NOTIONAL SPANISH BOND FUTURES (MEFF)

	Open	Sett price	Change	High	Low	Est. vol.	Open int.
Dec	88.77	88.89	+0.33	89.16	88.75	45,339	33,522

UK

■ NOTIONAL UK GILT FUTURES (LIFFE)* £50,000 32nds of 100%

	Open	Sett price	Change	High	Low	Est. vol	Open int.
Dec	105-19	106-00	+0-21	106-02	105-18	46666	99737
Mar	-	105-17	+0-21	-	-	0	63

■ LONG GILT FUTURES OPTIONS (LIFFE) £50,000 64ths of 100%

Strike Price	CALLS Nov	CALLS Dec	CALLS Jan	CALLS Mar	PUTS Nov	PUTS Dec	PUTS Jan	PUTS Mar
106	0-54	1-17	1-20	1-54	0-54	1-17	1-50	2-20
107	0-27	0-52	0-58	1-27	1-27	1-52	2-24	2-57
108	0-12	0-32	0-39	1-04	2-12	2-32	3-05	3-34

Est. vol. total, Calls 1696 Puts 1410. Previous day's open int., Calls 31886 Puts 25486

Ecu

■ ECU BOND FUTURES (MATIF) ECU100,000

	Open	Sett price	Change	High	Low	Est. vol.	Open int.
Dec	86.10	86.52	+0.44	86.56	86.10	2,030	7,624

US

■ US TREASURY BOND FUTURES (CBT) $100,000 32nds of 100%

	Open	Latest	Change	High	Low	Est. vol.	Open int.
Dec	114-02	114-07	-0-04	114-14	114-02	356,486	319,732
Mar	113-22	113-25	-0-06	114-00	113-22	1,402	12,446
Jun	113-11	113-10	-0-05	113-16	113-10	4	2,402

Japan

■ NOTIONAL LONG TERM JAPANESE GOVT. BOND FUTURES (LIFFE) Y100m 100ths of 100%

	Open	Close	Change	High	Low	Est. vol	Open int.
Dec	121.65	-	-	121.75	121.60	2262	0
Mar	120.64	-	-	120.67	120.64	121	0

* LIFFE futures also traded on APT. All Open interest figs. are for previous day.

FT-ACTUARIES FIXED INTEREST INDICES

Price Indices UK Gilts	Mon Oct 2	Day's change %	Fri Sep 29	Accrued interest	xd adj. ytd		Low coupon yield Oct 2	Low Sep 29	Low Yr. ago	Medium coupon yield Oct 2	Medium Sep 29	Medium Yr. ago	High coupon yield Oct 2	High Sep 29	High Yr. ago
1 Up to 5 years (23)	121.78	+0.29	121.43	1.84	8.38	5 yrs	7.58	7.72	8.75	7.56	7.70	8.82	7.66	7.78	9.01
2 5-15 years (21)	144.78	+0.58	144.33	1.67	9.78	15 yrs	8.20	8.23	8.71	8.22	8.26	8.84	8.31	8.35	9.05
3 Over 15 years (9)	160.09	+0.26	159.67	2.43	9.84	20 yrs	8.24	8.25	8.67	8.27	8.29	8.84	8.35	8.37	8.95
4 Irredeemables (6)	182.76	-0.26	183.22	3.51	8.83	Irred.†	8.35	8.32	8.72						
5 All stocks (59)	140.71	+0.42	140.31	1.89	9.35										

Index-linked							Inflation 5% Oct 2	Inflation 5% Sep 29	Inflation 5% Yr. ago	Inflation 10% Oct 2	Inflation 10% Sep 29	Inflation 10% Yr. ago
6 Up to 5 years (1)	192.54	+0.15	192.25	-0.57	8.37	Up to 5 yrs	3.12	3.17	4.10	2.04	2.09	2.98
7 Over 5 years (11)	185.07	+0.35	184.43	0.86	4.00	Over 5 yrs	3.67	3.69	3.88	3.47	3.50	3.59
8 All stocks (12)	185.11	+0.34	184.47	0.83	4.10							

Average gross redemption yields are shown above. Coupon Bands: Low: 0%-7¾%; Medium: 8%-10¾%; High: 11% and over. † Flat yield. ytd Year to date.

FT FIXED INTEREST INDICES

	Oct 2	Sep 29	Sep 28	Sep 27	Sep 26	Yr ago	High*	Low*
Govt. Secs. (UK)	93.25	93.00	92.98	92.98	93.59	90.04	95.51	90.22
Fixed Interest	111.52	111.54	111.63	112.04	112.29	107.17	114.66	108.77

* for 1995. Government Securities high since compilation: 127.40 (9/1/35), low 49.18 (3/1/75). Fixed Interest high since compilation: 133.87 (21/1/94) , low 50.53 (3/1/75) . Basis 100: Government Securities 15/10/26 and Fixed Interest 1928. SE activity indices rebased 1974.

GILT EDGED ACTIVITY INDICES

	Sep 29	Sep 28	Sep 27	Sep 26	Sep 25
Gilt Edged bargains	84.8	88.7	112.6	85.2	79.8
5-day average	90.2	91.1	89.4	82.0	81.5

FT/ISMA INTERNATIONAL BOND SERVICE

Listed are the latest international bonds for which there is an adequate secondary market. Latest prices at 7:00 pm on October 2

	Issued	Bid	Offer	Chg.	Yield
U.S. DOLLAR STRAIGHTS					
Sweden 8 97	2500	108¼	108½		4.78
Abbey Natl Treasury 8 03 £	1000	97⅜	97⅝	+⅛	8.47
[illegible]					

Further sections in the table (headings only, entries [illegible]): STRAIGHTS, SWISS FRANC STRAIGHTS, YEN STRAIGHTS, OTHER STRAIGHTS, DEUTSCHE MARK STRAIGHTS, FLOATING RATE NOTES, CONVERTIBLE BONDS.

* No information available - previous day's price. † Only one market maker supplied a price.

STRAIGHT BONDS: The yield is the yield to redemption of the bid-price; the amount issued is in millions of currency units. Chg. day=Change on day. FLOATING RATE NOTES: Denominated in dollars unless otherwise indicated. Coupon shown is minimum. Spread=Margin above six-month offered rate ([illegible] three-month [illegible] above mean rate) for US dollars. C.cpn=The current coupon. CONVERTIBLE BONDS: Denominated in dollars unless otherwise indicated. Cnv. price=Nominal amount of bond per share expressed in currency of share at conversion rate fixed at issue. Prem=Percentage premium of the current effective price of acquiring shares via the bond over the most recent price of the shares.

UK GILTS PRICES

Notes	Yield Int	Yield Red	Price £	+ or -	1995 High	1995 Low
Shorts" (Lives up to Five Years)						
Treas 12¾pc 1995‡‡	12.67	6.63	100$\frac{21}{32}$	—	104⅞	100$\frac{21}{32}$
14pc 1996	13.71	6.40	102⅛	—	106⅞	102⅛
15¼pc 1996‡‡	14.53	6.48	104$\frac{31}{32}$xd	—	109⅝	104⅞
Exch 13¼pc 1996‡‡	12.76	6.53	103$\frac{27}{32}$	—	107¼	103$\frac{27}{32}$
Conversion 10pc 1996	9.65	6.43	103$\frac{21}{32}$	+$\frac{1}{32}$	104$\frac{13}{32}$	103$\frac{1}{16}$
Treas 13¼pc 1997‡‡	12.25	6.50	108$\frac{5}{32}$	-$\frac{1}{32}$	109$\frac{27}{32}$	107$\frac{13}{16}$
[illegible]						

Notes	Yield Int	Yield Red	Price £	+ or -	1995 High	1995 Low
Conv 9½pc 2005	8.89	8.08	109$\frac{3}{16}$xd	+$\frac{13}{32}$	111$\frac{15}{16}$	103⅝
Treas 12½pc 2003-5	9.91	8.04	126$\frac{5}{32}$	+$\frac{13}{32}$	128$\frac{13}{32}$	119$\frac{15}{32}$
Treas 8½pc 2005‡‡	8.24	8.03	103$\frac{3}{16}$	+$\frac{11}{32}$	105$\frac{29}{32}$	97⅝
7¾pc 2006‡‡	7.80	8.03	98$\frac{7}{16}$	+$\frac{11}{32}$	96$\frac{29}{32}$	95$\frac{1}{16}$
7¾pc 2006‡‡	8.01	8.10	96⅝	—	99$\frac{11}{32}$	92⅛
8pc 2002-6‡‡	8.06	8.06	99$\frac{5}{16}$xd	+$\frac{7}{16}$	101$\frac{5}{16}$	93¼
[illegible]						

Notes		Yield (1)	Yield (2)	Price £	+ or -	1995 High	1995 Low
Index-Linked	(b)						
2pc '96	(67.9)	0.45	3.11	212¾	—	213$\frac{5}{16}$	201$\frac{5}{16}$
4⅝pc '98‡‡	(135.6)	2.03	3.12	111½xd	+$\frac{3}{16}$	112$\frac{5}{32}$	105$\frac{5}{16}$
2½pc '01	(78.3)	3.04	3.52	176$\frac{5}{32}$	+¼	177$\frac{13}{32}$	165$\frac{23}{32}$
2½pc '03	(78.8)	3.20	3.57	172$\frac{5}{32}$	+$\frac{3}{16}$	173⅞	161$\frac{11}{32}$
4⅜pc '04‡‡	(135.6)	3.22	3.56	114$\frac{5}{16}$xd	+$\frac{3}{16}$	115$\frac{13}{32}$	108$\frac{5}{16}$
2pc '06	(69.5)	3.31	3.57	180$\frac{15}{32}$	+½	183$\frac{3}{16}$	168$\frac{3}{16}$
2½pc '09	(78.8)	3.40	3.63	162$\frac{13}{32}$	+½	165$\frac{11}{16}$	152$\frac{3}{16}$
[illegible]							

Further sections of the gilts table (headings only, entries [illegible]): Five to Fifteen Years, Over Fifteen Years, Undated, Other Fixed Interest.

Prospective real redemption rate on projected inflation of (1) 10% and (2) 5%. (b) Figures in parentheses show RPI base for indexing (ie 8 months prior to issue) and have been adjusted to reflect rebasing of RPI to 100 in February 1987. Conversion factor 3.945. RPI for January 1995: 146.0 and for August 1995: 149.9.

■ "Tap" stock. ‡‡ Tax-free to non-residents on application. E Auction basis. xd Ex dividend. Closing mid-prices are shown in pounds per £100 nominal of stock.

هكذا من الأصل

CURRENCIES AND MONEY

MARKETS REPORT

Sterling rallies on company takeover rumour

By Philip Gawith

Rumours of foreign investors purchasing sterling for possible take-over bids and the better performance of UK asset markets yesterday helped the pound outperform on the foreign exchanges.

Unusually, it was able to make gains against both the D-Mark and the dollar at the same time. Sterling finished in London at DM2.2693, from DM2.2521, and at $1.5871, from $1.5827. The trade weighted index closed at 85.2 from 84.7.

Elsewhere, the dollar put on a firmer showing ahead of the weekend G7 meeting in Washington where exchange rate policy is expected to be a topic of discussion.

There was a slight divergence in its performance against the yen and the D-Mark, with gains against the Japanese currency, which allowed it to stay above Y100, unmatched by similar progress against the D-Mark.

Trading was generally quiet with volumes low and attention focused mainly on the G7 meeting and the US payrolls report on Friday. The dollar finished at Y100.585, from Y98.65. Against the D-Mark it closed at DM 1.4299 from DM1.423.

There was little obvious market fall-out from the meeting in Valencia of EU finance ministers and central bankers. Most currencies made gains against the D-Mark, with the lira finishing at L1,126 from L1,133. The French franc closed at FFr3.447 from FFr3.451.

Although the Valencia meeting was not wholly successful in dispelling uncertainties, market prices appear to have factored in a considerable amount of EU related risk.

■ Pound in New York

Oct 2	Latest	Prev. close
£ spot	1.5905	1.5825
1 mth	1.5893	1.5814
3 mth	1.5875	1.5796
1 yr	1.5790	1.5712

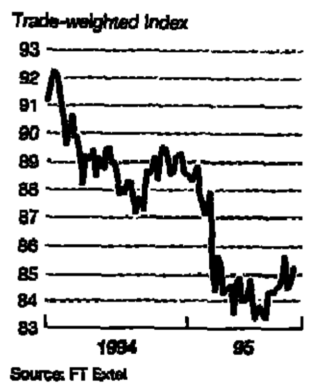
■ The quiet markets yesterday would appear to reflect caution on the part of traders and investors ahead of the weekend G7 gathering. There is still a residual belief that central banks may intervene to buy the dollar, and anticipation that the G7 gathering may well produce further evidence of commitment to boosting the dollar.

"They have invested a fair amount. They are not going to give up at the first whiff of grape-shot," said one trader.

Mr Robin Marshall, chief economist at Chase Manhattan in London said the Bundesbank remained a key variable. Not only was their attitude to foreign exchange intervention a crucial factor in determining market sentiment, but their approach to monetary union in Europe affected the attractiveness of the D-Mark, and hence the dollar. So long as the Bundesbank preached the need for a strict approach to Emu, this would attract flows into the D-Mark, he said.

Sterling

Trade-weighted index



Source: FT Extel

Although some analysts have reverted to their earlier pessimism about the dollar, especially against the D-Mark, the technical outlook does not appear to bear this out. Mr Brian Marber, independent technical analyst, says that even if the rate fell to DM1.3975 or below, this would not change his view that the dollar's main trend is still up.

"All of the advance from October 1978's DM1.72 low to November 1978's DM1.9305 had been given up by December 1979, while after a renewed advance from that DM1.71 low to DM1.97 between December 1979 and April 1980, the dollar reacted to DM1.7350 again before rising to DM3.4513 during the next five years."

The lesson, says Mr Marber, is: "The larger the base, the larger the rise."

For the time being, the squabble about the US budget remains a background issue. "No-one is taking the debt default prospect very seriously as yet," says Mr Marshall.

Likewise, while the debate about Emu remains something for the market to fret about, it does not appear to have the potential to prompt a currency crisis of the sort seen in 1992/3. Unlike then, when the prospect of failure had not been priced into the market, analysts argue that markets are now highly sceptical about Emu.

■ Sterling's rally was helped by bargain hunting on the part of foreign investors following the shake-out last week in UK asset markets.

The rumours about companies needing to buy sterling appeared to centre around the US based group Rhone-Poulenc Rorer, which is bidding for Fisons plc, the UK pharmaceuticals firm.

UK interest rate futures rose across the board, with the March short sterling contract closing at 93.53, from 93.46.

The Bank of England cleared a £800m market shortage in its daily operations. Three month LIBOR eased to 6¾ per cent from 6 25/32 per cent.

■ OTHER CURRENCIES

Oct 2	£	$
Czech Rp	41.9418 - 41.9894	26.4350 - 26.4500
Hungary	206.512 - 206.708	130.160 - 130.210
Iran	4762.50 - 4759.80	3000.00 - 3000.00
Kuwait	0.4749 - 0.4753	0.2993 - 0.2994
Poland	3.8713 - 3.8783	2.4400 - 2.4430
Russia	7123.12 - 7123.83	4487.00 - 4490.00
U.A.E.	5.8274 - 5.8310	3.6729 - 3.6731

WORLD INTEREST RATES

MONEY RATES

October 2	Over night	One month	Three mths	Six mths	One year	Lomb. inter.	Dis. rate	Repo rate
Belgium	4	4⅛	4¼	4 5/16	4 7/16	8.00	3.50	-
week ago	4 1/16	4⅛	4 3/16	4⅜	4½	8.00	3.50	-
France	5⅝	6⅛	6 3/16	6¼	6 5/16	5.00	-	6.15
week ago	6	6⅛	6 5/16	6 5/16	6½	5.00	-	6.15
Germany	4⅛	4⅛	4 1/16	4 1/16	4 1/16	5.50	3.50	4.08
week ago	4	4⅛	3 31/32	3 31/32	3 31/32	5.50	3.50	4.12
Ireland	5⅝	5 11/16	5 13/16	5 15/16	6 3/16	-	-	6.25
week ago	5⅝	5 11/16	5 15/16	6 1/16	6⅜	-	-	6.25
Italy	10 3/16	10 3/16	10 5/16	10⅜	10¾	-	9.00	10.29
week ago	10¼	10 3/16	10½	10 9/16	10 11/16	-	9.00	10.31
Netherlands	3⅞	3⅞	3⅞	3⅞	4	-	3.50	3.80
week ago	3⅞	3⅞	3⅞	3⅞	3 15/16	-	3.50	-
Switzerland	1 15/16	2⅝	2 1/16	2 1/16	2 1/16	5.00	2.00	-
week ago	2 1/16	2⅝	2½	2 1/16	2 1/16	5.00	2.00	-
US	5 13/16	5 13/16	5 13/16	5⅞	6 1/16	-	5.25	-
week ago	5 11/16	5 13/16	5⅞	6 1/16	5 15/16	-	5.25	-
Japan	17/32	17/32	17/32	17/32	17/32	-	0.50	-
week ago	½	17/32	⅝	⅝	⅝	-	0.50	-
■ $ LIBOR FT London								
Interbank Fixing	-	5⅞	5 13/16	5 13/16	5 13/16	-	-	-
week ago	-	5⅞	5 15/16	5⅞	5⅞	-	-	-
US Dollar CDs	-	5.61	5.60	5.60	5.71	-	-	-
week ago	-	5.61	5.45	5.52	5.60	-	-	-
ECU Linked Ds	-	5 13/16	5 13/16	5 13/16	5 11/16	-	-	-
week ago	-	5 13/16	5½	5½	5 11/16	-	-	-
SDR Linked Ds	-	3 25/32	3 21/32	3 21/32	3 11/16	-	-	-
week ago	-	3 25/32	3 21/32	3 21/32	3 21/32	-	-	-

$ LIBOR interbank fixing rates are offered rates for $10m quoted to the market by four reference banks at 11am each working day. The banks are: Bankers Trust, Bank of Tokyo, Barclays and National Westminster.
Mid rates are shown for the domestic Money Rates, US$ CDs, ECU & SDR Linked Deposits (Ds).

EURO CURRENCY INTEREST RATES

Oct 2	Short term	7 days notice	One month	Three months	Six months	One year
Belgian Franc	4 3/16 - 4 1/16	4 3/16 - 4 1/16	4 3/16 - 4 1/16	4 5/16 - 4 3/16	4⅜ - 4¼	4 7/16 - 4 5/16
Danish Krone	6½ - 6¼	5½ - 5 5/16	5 13/16 - 5⅝	5 13/16 - 5⅝	5 15/16 - 5 13/16	5 29/32 - 5 25/32
D-Mark	4⅛ - 4	4 1/16 - 3 15/16	4⅛ - 4	4 1/16 - 3 15/16	4 1/16 - 3 15/16	4⅛ - 4
Dutch Guilder	3 13/16 - 3 11/16	3 13/16 - 3 11/16	3⅞ - 3 11/16	3⅞ - 3 11/16	3⅞ - 3 11/16	4 - 3 13/16
French Franc	6 - 5½	5 13/16 - 5 5/16	6 1/16 - 5 13/16	6 3/16 - 6 1/16	6¼ - 6⅛	6 5/16 - 6 1/16
Portuguese Esc.	8 15/16 - 8 11/16	8¾ - 8⅝	9⅛ - 8⅞	9⅜ - 9¼	9 9/16 - 9 7/16	9⅞ - 9⅝
Spanish Peseta	9⅜ - 9¼	9 7/16 - 9 5/16	9⅜ - 9¼	9 7/16 - 9 5/16	9½ - 9⅜	9¾ - 9⅝
Sterling	7 - 6¾	6¾ - 6⅝	6¾ - 6 11/16	6¾ - 6 11/16	6 25/32 - 6 21/32	6 27/32 - 6 23/32
Swiss Franc	2 5/16 - 2 3/16	2 5/16 - 2 3/16	2 7/16 - 2 5/16	2½ - 2⅜	2½ - 2⅜	2½ - 2⅜
Can. Dollar	6 1/16 - 6	6 1/16 - 5⅞	6 3/16 - 6 1/16	6⅜ - 6¼	6½ - 6⅜	6⅝ - 6½
US Dollar	6 - 5⅞	5⅞ - 5¾	5⅞ - 5¾	5⅞ - 5¾	5⅞ - 5¾	6 1/16 - 5 15/16
Italian Lira	8 5/16 - 8 3/16	10½ - 10¼	10 7/16 - 10 5/16	10 11/16 - 10 7/16	10⅞ - 10⅝	10 15/16 - 10 11/16
Yen	9/16 - ½	17/32 - 15/32	17/32 - 15/32	9/16 - ½	7/16 - 5/16	⅝ - 9/16
Asian $Sing	3 - 2⅞	2½ - 2⅜	2 9/16 - 2 7/16	2 11/16 - 2 9/16	2¾ - 2⅝	3 1/16 - 2 15/16

Short term rates are call for the US Dollar and Yen, others: two days' notice.

■ THREE MONTH PIBOR FUTURES (MATIF) Paris Interbank offered rate (FFr5m)

	Open	Sett price	Change	High	Low	Est. vol	Open int.
Dec	93.53	93.62	+0.17	93.67	93.52	35,776	43,058
Mar	93.95	94.02	+0.12	94.07	93.95	8,917	28,801
Jun	94.15	94.25	+0.10	94.29	94.15	4,047	19,709

■ THREE MONTH EUROMARK FUTURES (LIFFE)* DM1m points of 100%

	Open	Sett price	Change	High	Low	Est. vol	Open int.
Dec	96.05	96.04	-	96.06	96.03	11048	146885
Mar	96.10	96.10	+0.02	96.11	96.08	12173	155191
Jun	95.95	95.99	+0.05	95.99	95.95	13400	118430
Sep	95.72	95.76	+0.06	95.77	95.72	15275	81591

■ THREE MONTH EUROLIRA FUTURES (LIFFE)* L1000m points of 100%

	Open	Sett price	Change	High	Low	Est. vol	Open int.
Dec	89.45	89.45	+0.03	89.53	89.38	7422	34004
Mar	89.78	89.74	+0.04	89.82	89.72	1695	23033
Jun	89.86	89.85	+0.04	89.91	89.86	394	11935
Sep	89.85	89.82	+0.04	89.86	89.83	107	7554

■ THREE MONTH EURO SWISS FRANC FUTURES (LIFFE) SFr1m points of 100%

	Open	Sett price	Change	High	Low	Est. vol	Open int.
Dec	97.60	97.62	+0.06	97.64	97.57	2561	25984
Mar	97.61	97.64	+0.07	97.65	97.58	1889	13043
Jun	97.46	97.49	+0.07	97.50	97.44	499	4050
Sep	97.28	97.32	+0.06	97.32	97.27	305	2111

■ THREE MONTH ECU FUTURES (LIFFE) Ecu1m points of 100%

	Open	Sett price	Change	High	Low	Est. vol	Open int.
Dec	94.36	94.39	+0.07	94.39	94.36	869	7780
Mar	94.45	94.47	+0.08	94.48	94.45	300	4384
Jun	94.41	94.42	+0.08	94.44	94.41	115	2518
Sep	94.22	94.24	+0.08	94.25	94.22	44	1417

* LIFFE futures also traded on APT

■ EUROLIRA OPTIONS (LIFFE) L1000m points of 100%

Strike Price	CALLS Dec	CALLS Mar	CALLS Jun	PUTS Dec	PUTS Mar	PUTS Jun
8925	0.53	0.87	1.05	0.33	0.38	0.45
8950	0.38	0.71	0.89	0.43	0.47	0.54
8975	0.26	0.57	0.75	0.56	0.58	0.65

Est. vol. total, Calls 100 Puts 0. Previous day's open int., Calls 12274 Puts 5237

POUND SPOT FORWARD AGAINST THE POUND

Oct 2		Closing mid-point	Change on day	Bid/offer spread	Day's Mid high	Day's Mid low	One month Rate	One month %PA	Three months Rate	Three months %PA	One year Rate	One year %PA	Bank of Eng. Index
Europe													
Austria	(Sch)	15.9705	+0.1246	620 - 790	16.0102	15.8438	15.9401	2.3	15.8815	2.2	-	-	108.7
Belgium	(BFr)	46.6752	+0.4128	302 - 201	46.7810	46.3340	46.5802	2.4	46.3902	2.4	45.6552	2.2	109.1
Denmark	(DKr)	8.7955	+0.055	914 - 995	8.8214	8.7491	8.7879	1.0	8.7713	1.1	8.7088	1.0	110.0
Finland	(FM)	6.8042	+0.0614	968 - 116	6.8200	6.7420	6.7998	0.8	6.7917	0.7	-	-	88.3
France	(FFr)	7.8226	+0.0513	180 - 272	7.8454	7.7737	7.8173	0.8	7.806	0.8	7.7493	0.9	110.2
Germany	(DM)	2.2693	+0.0172	682 - 704	2.2768	2.2553	2.2641	2.7	2.2546	2.6	2.2138	2.4	111.7
Greece	(Dr)	369.005	+2.214	821 - 189	369.979	366.821	-	-	-	-	-	-	67.7
Ireland	(I£)	0.9805	+0.0026	796 - 813	0.9813	0.9754	0.9797	1.0	0.9784	0.9	0.9752	0.5	96.0
Italy	(L)	2556.14	+5.62	443 - 786	2559.25	2539.27	2563.38	-3.4	2578.29	-3.5	2646.44	-3.5	89.7
Luxembourg	(LFr)	46.6752	+0.4128	302 - 201	46.7810	46.3340	46.5802	2.4	46.3902	2.4	45.6552	2.2	109.1
Netherlands	(Fl)	2.5411	+0.02	397 - 425	2.5479	2.5254	2.5347	3.0	2.5237	2.7	2.4775	2.5	109.2
Norway	(NKr)	9.9555	+0.0543	504 - 606	9.9911	9.8588	9.9431	1.5	9.9213	1.4	9.8458	1.1	99.5
Portugal	(Es)	237.391	+0.801	244 - 538	238.315	236.249	237.931	-2.7	239.151	-3.0	-	-	95.5
Spain	(Pta)	195.477	+0.504	358 - 596	196.168	194.695	195.977	-3.1	196.917	-2.9	201.317	-3.0	81.0
Sweden	(SKr)	11.0142	+0.0505	045 - 238	11.0540	10.9329	11.0184	-0.2	11.021	-0.2	11.0443	-0.3	82.7
Switzerland	(SFr)	1.8253	+0.0067	240 - 266	1.8329	1.8240	1.8182	4.7	1.8063	4.2	1.7534	3.9	116.3
UK	(£)	-	-	-	-	-	-	-	-	-	-	-	85.2
Ecu	-	1.2244	+0.0076	236 - 252	1.2265	1.2165	1.2233	1.1	1.221	1.1	1.2117	1.0	-
SDR†	-	1.048900	-	-	-	-	-	-	-	-	-	-	-
Americas													
Argentina	(Peso)	1.5868	+0.0043	863 - 873	1.5893	1.5748	-	-	-	-	-	-	-
Brazil	(R$)	1.5126	+0.0042	120 - 132	1.5150	1.5008	-	-	-	-	-	-	-
Canada	(C$)	2.1248	-0.007	238 - 258	2.1273	2.1102	2.1239	0.5	2.1237	0.2	2.1288	-0.2	85.3
Mexico	(New Peso)	10.1254	+0.0515	146 - 362	10.1410	10.0630	-	-	-	-	-	-	-
USA	($)	1.5871	+0.0044	866 - 875	1.5895	1.5748	1.5859	0.9	1.5841	0.7	1.576	0.7	92.7
Pacific/Middle East/Africa													
Australia	(A$)	2.0807	-0.0182	794 - 820	2.0820	2.0780	2.082	-0.7	2.0849	-0.8	2.0996	-0.9	87.1
Hong Kong	(HK$)	12.2711	+0.0344	668 - 753	12.2892	12.1776	12.2676	0.3	12.2552	0.5	12.2216	0.4	-
India	(Rs)	53.7296	+0.0365	112 - 480	53.8480	53.2280	-	-	-	-	-	-	-
Israel	(Shk)	4.7694	+0.0246	641 - 746	4.7746	4.7338	-	-	-	-	-	-	-
Japan	(Y)	159.634	+3.501	533 - 734	159.940	157.590	158.719	6.9	157.109	6.3	150.184	5.9	143.1
Malaysia	(M$)	4.0046	+0.0312	027 - 065	4.0103	3.9704	-	-	-	-	-	-	-
New Zealand	(NZ$)	2.4085	+0.0044	066 - 104	2.4104	2.4059	2.4144	-3.0	2.4237	-2.5	2.4493	-1.7	100.9
Philippines	(Peso)	41.3506	+0.1133	151 - 861	41.3881	41.3151	-	-	-	-	-	-	-
Saudi Arabia	(SR)	5.9525	+0.0164	505 - 544	5.9614	5.9068	-	-	-	-	-	-	-
Singapore	(S$)	2.2719	+0.0229	704 - 733	2.2755	2.2494	-	-	-	-	-	-	-
South Africa	(R)	5.8075	+0.0287	046 - 103	5.8152	5.7578	-	-	-	-	-	-	-
South Korea	(Won)	1219.41	+3.58	898 - 984	1221.21	1210.08	-	-	-	-	-	-	-
Taiwan	(T$)	42.6687	-0.1616	335 - 038	42.7482	42.3548	-	-	-	-	-	-	-
Thailand	(Bt)	39.8826	+0.1884	554 - 098	39.9280	39.5770	-	-	-	-	-	-	-

† Rates for Sep 29. Bid/offer spreads in the Pound Spot table show only the last three decimal places. Forward rates are not directly quoted to the market but are implied by current interest rates. Sterling index calculated by the Bank of England. Base average 1990 = 100. Index rebased 1/2/95. Bid, Offer and Mid-rates in both this and the Dollar Spot tables derived from THE WM/REUTERS CLOSING SPOT RATES. Some values are rounded by the F.T.

DOLLAR SPOT FORWARD AGAINST THE DOLLAR

Oct 2		Closing mid-point	Change on day	Bid/offer spread	Day's mid high	Day's mid low	One month Rate	One month %PA	Three months Rate	Three months %PA	One year Rate	One year %PA	J.P Morgan index
Europe													
Austria	(Sch)	10.0630	+0.051	605 - 655	10.0975	10.0470	10.0479	1.6	10.0178	1.8	9.9085	1.5	105.8
Belgium	(BFr)	29.4100	+0.18	900 - 300	29.5050	29.3900	29.369	1.7	29.29	1.6	28.99	1.4	108.8
Denmark	(DKr)	5.5420	+0.0195	410 - 430	5.5637	5.5390	5.5427	-0.2	5.5385	0.3	5.546	-0.1	109.0
Finland	(FM)	4.2874	+0.0271	839 - 908	4.3044	4.2770	4.287	0.1	4.2859	0.1	4.2814	0.1	97.7
France	(FFr)	4.9290	+0.0188	275 - 305	4.9495	4.9250	5.0144	-20.8	4.9243	0.4	4.912	0.3	109.7
Germany	(DM)	1.4299	+0.0069	296 - 302	1.4350	1.4275	1.4277	1.8	1.4233	1.8	1.4048	1.8	111.0
Greece	(Dr)	232.510	+0.76	460 - 560	233.280	232.400	234.235	-8.9	237.435	-8.5	250.81	-7.9	67.0
Ireland	(I£)	1.6188	+0.0003	178 - 197	1.6223	1.6100	1.619	-0.1	1.6191	-0.1	1.6256	-0.4	-
Italy	(L)	1610.63	-0.67	000 - 125	1618.00	1606.00	1617.38	-5.0	1629.43	-4.7	1686.63	-4.7	69.0
Luxembourg	(LFr)	29.4100	+0.18	900 - 300	29.5050	29.3900	29.369	1.7	29.29	1.6	28.99	1.4	106.8
Netherlands	(Fl)	1.6012	+0.0083	007 - 016	1.6070	1.6000	1.5985	2.0	1.5935	1.9	1.5735	1.7	108.7
Norway	(NKr)	6.2730	+0.0171	715 - 744	6.3185	6.2470	6.2692	0.7	6.263	0.6	6.253	0.3	98.5
Portugal	(Es)	149.580	+0.095	530 - 630	150.470	149.470	150.045	-3.7	151.055	-3.9	155.68	-4.1	95.4
Spain	(Pta)	123.170	-0.02	130 - 210	123.880	123.130	123.55	-3.7	124.32	-3.7	127.815	-3.8	80.3
Sweden	(SKr)	6.9400	+0.0128	359 - 441	6.9744	6.9345	6.9575	-3.0	6.994	-3.1	7.1625	-3.2	82.3
Switzerland	(SFr)	1.1501	+0.0011	496 - 506	1.1612	1.1495	1.1465	3.8	1.1404	3.4	1.1126	3.3	115.0
UK	(£)	1.5871	+0.0044	866 - 875	1.5895	1.5748	1.5859	0.9	1.5841	0.7	1.576	0.7	84.2
Ecu	-	1.2962	-0.0046	957 - 967	1.2977	1.2917	1.2966	-0.4	1.2973	-0.3	1.2996	-0.3	-
SDR†	-	0.68380	-	-	-	-	-	-	-	-	-	-	-
Americas													
Argentina	(Peso)	0.9999	-	998 - 999	1.0000	0.9999	-	-	-	-	-	-	-
Brazil	(R$)	0.9531	-	530 - 532	0.9536	0.9530	-	-	-	-	-	-	-
Canada	(C$)	1.3389	-0.0081	386 - 391	1.3400	1.3375	1.3394	-0.4	1.3407	-0.5	1.3509	-0.9	83.9
Mexico	(New Peso)	6.3800	+0.015	750 - 850	6.3850	6.3750	6.3822	-0.4	6.3854	-0.3	6.3903	-0.2	-
USA	($)	-	-	-	-	-	-	-	-	-	-	-	93.5
Pacific/Middle East/Africa													
Australia	(A$)	1.3110	-0.0139	106 - 115	1.3195	1.3090	1.3128	-1.6	1.3164	-1.6	1.3361	-1.9	87.0
Hong Kong	(HK$)	7.7320	+0.0005	315 - 325	7.7325	7.7315	7.7336	-0.2	7.7355	-0.2	7.7557	-0.3	-
India	(Rs)	33.8550	-0.07	900 - 200	33.9200	33.7900	34.005	-5.3	34.31	-5.4	35.78	-5.7	-
Israel	(Shk)	3.0052	+0.0074	027 - 076	3.0094	2.9970	-	-	-	-	-	-	-
Japan	(Y)	100.585	+1.935	550 - 620	100.730	99.8500	100.09	5.9	99.17	5.6	95.295	5.3	145.8
Malaysia	(M$)	2.5233	+0.0128	228 - 238	2.5230	2.5150	2.5233	0.0	2.5236	-0.1	2.5313	-0.3	-
New Zealand	(NZ$)	1.5175	-0.0013	168 - 184	1.5277	1.5158	1.5216	-3.2	1.5291	-3.1	1.5538	-2.4	-
Philippines	(Peso)	26.0550	-	400 - 700	26.0700	26.0400	-	-	-	-	-	-	-
Saudi Arabia	(SR)	3.7507	+0.0001	505 - 508	3.7508	3.7505	3.7513	-0.2	3.7521	-0.1	3.7553	-0.1	-
Singapore	(S$)	1.4315	+0.0105	310 - 320	1.4320	1.4230	1.4281	2.9	1.4218	2.7	1.397	2.4	-
South Africa	(R)	3.6593	+0.008	585 - 600	3.6600	3.6525	3.6846	-8.3	3.7346	-8.2	3.9658	-8.4	-
South Korea	(Won)	768.350	+0.15	300 - 400	769.000	767.000	771.35	-4.7	774.85	-3.4	793.35	-3.3	-
Taiwan	(T$)	26.8855	-0.176	710 - 000	27.0050	26.8700	26.9055	-0.9	26.9455	-0.9	-	-	-
Thailand	(Bt)	25.1300	+0.05	200 - 400	25.1400	25.1100	25.2175	-4.2	24.865	4.2	26.065	-3.8	-

† SDR rate per $ for Sep 29. Bid/offer spreads in the Dollar Spot table show only the last three decimal places. Forward rates are not directly quoted to the market but are implied by current interest rates. UK, Ireland & ECU are quoted in US currency. J.P. Morgan nominal indices Sep 29. Base average 1990=100

CROSS RATES AND DERIVATIVES

EXCHANGE CROSS RATES

Oct 2		BFr	DKr	FFr	DM	I£	L	Fl	NKr	Es	Pta	SKr	SFr	£	C$	$	Y	Ecu
Belgium	(BFr)	100	18.85	16.76	4.862	2.102	5477	5.445	21.33	508.7	418.9	23.59	3.910	2.143	4.553	3.400	342.0	2.623
Denmark	(DKr)	53.06	10	8.894	2.580	1.115	2906	2.889	11.32	269.9	222.3	12.52	2.075	1.137	2.416	1.804	181.5	1.392
France	(FFr)	59.67	11.24	10	2.901	1.254	3268	3.249	12.73	303.5	249.9	14.08	2.333	1.278	2.717	2.029	204.0	1.565
Germany	(DM)	20.57	3.876	3.447	1	0.432	1126	1.120	4.387	104.6	86.16	4.852	0.804	0.441	0.937	0.699	70.34	0.539
Ireland	(I£)	47.57	8.965	7.973	2.313	1	2606	2.590	10.15	242.0	199.3	11.22	1.860	1.019	2.166	1.618	162.7	1.248
Italy	(L)	1.826	0.344	0.306	0.089	0.038	100.	0.099	0.389	9.288	7.649	0.431	0.071	0.039	0.083	0.062	6.244	0.048
Netherlands	(Fl)	18.37	3.461	3.078	0.893	0.386	1006	1	3.918	93.43	76.94	4.333	0.718	0.394	0.836	0.625	62.81	0.482
Norway	(NKr)	46.88	8.835	7.857	2.279	0.985	2568	2.552	10	238.5	196.4	11.06	1.833	1.005	2.135	1.594	160.3	1.230
Portugal	(Es)	19.66	3.705	3.295	0.956	0.413	1077	1.070	4.193	100.	82.35	4.638	0.769	0.421	0.895	0.668	67.23	0.516
Spain	(Pta)	23.87	4.499	4.001	1.161	0.502	1307	1.300	5.092	121.4	100.	5.632	0.934	0.512	1.087	0.812	81.64	0.626
Sweden	(SKr)	42.39	7.988	7.104	2.061	0.891	2322	2.308	9.042	215.6	177.6	10	1.658	0.908	1.930	1.441	145.0	1.112
Switzerland	(SFr)	25.57	4.819	4.286	1.243	0.538	1401	1.392	5.455	130.1	107.1	6.033	1	0.548	1.164	0.870	87.45	0.671
UK	(£)	46.67	8.795	7.822	2.269	0.981	2556	2.541	9.955	237.4	195.5	11.01	1.825	1	2.125	1.587	159.6	1.224
Canada	(C$)	21.96	4.139	3.681	1.068	0.462	1203	1.196	4.685	111.7	92.00	5.181	0.859	0.471	1	0.747	75.11	0.576
US	($)	29.41	5.542	4.929	1.430	0.618	1611	1.601	6.273	149.6	123.2	6.938	1.150	0.630	1.339	1	100.6	0.771
Japan	(Y)	29.24	5.511	4.901	1.422	0.615	1602	1.592	6.237	148.7	122.5	6.898	1.143	0.627	1.331	0.994	100.	0.767
Ecu		38.13	7.185	6.391	1.854	0.801	2088	2.076	8.133	194.0	159.7	8.995	1.491	0.817	1.736	1.297	130.4	1

Danish Kroner, French Franc, Norwegian Kroner, and Swedish Kronor per 10; Belgian Franc, Yen, Escudo, Lira and Peseta per 100.

■ D-MARK FUTURES (IMM) DM 125,000 per DM

	Open	Latest	Change	High	Low	Est. vol	Open int.
Dec	0.7020	0.7013	-0.0011	0.7020	0.6994	21,137	46,530
Mar	0.7041	0.7047	-0.0011	0.7047	0.7100	22	2,403
Jun	-	0.7065	-	-	0.7065	19	12

■ JAPANESE YEN FUTURES (IMM) Yen 12.5m per Yen 100

	Open	Latest	Change	High	Low	Est. vol	Open int.
Dec	1.0144	1.0069	-0.0057	1.0144	1.0042	27,078	59,832
Mar	1.0219	1.0211	-0.0058	1.0220	1.0186	197	8,241
Jun	-	1.0405	-0.0060	-	-	7	278

■ SWISS FRANC FUTURES (IMM) SFr 125,000 per SFr

	Open	Latest	Change	High	Low	Est. vol	Open int.
Dec	0.8691	0.7745	+0.0029	0.8749	0.8676	16,300	29,869
Mar	0.8785	0.8818	+0.0030	0.8818	-	895	1,865
Jun	0.8858	0.8883	-0.0001	0.8883	0.8852	22	35

■ STERLING FUTURES (IMM) £62,500 per £

	Open	Latest	Change	High	Low	Est. vol	Open int.
Dec	1.5800	1.5844	+0.0082	1.5846	1.5736	4,077	30,477
Mar	1.5760	1.5810	+0.0012	1.5810	1.5760	4	119
Jun	-	1.5750	-	1.5750	-	14	10

UK INTEREST RATES

LONDON MONEY RATES

Oct 2	Over-night	7 days notice	One month	Three months	Six months	One year
Interbank Sterling	7¼ - 6⅝	6 13/16 - 6⅝	6¾ - 6⅝	6 13/16 - 6 11/16	6 13/16 - 6 11/16	6 13/16 - 6 11/16
Sterling CDs	-	-	6 21/32 - 6 19/32	6¾ - 6 11/16	6¾ - 6 11/16	6¾ - 6 11/16
Treasury Bills	-	-	6⅝ - 6 9/16	6 19/32 - 6 17/32	-	-
Bank Bills	-	-	6 21/32 - 6⅝	6⅝ - 6 19/32	6 9/16 - 6½	-
Local authority deps.	6 13/16 - 6 11/16	6 13/16 - 6 9/16	6¾ - 6⅝	6¾ - 6⅝	6¾ - 6⅝	6¾ - 6⅝
Discount Market deps	7 - 6¾	6⅞ - 6⅝	-	-	-	-

UK clearing bank base lending rate 6¾ per cent from February 2, 1995

	Up to 1 month	1-3 month	3-6 months	6-9 months	9-12 months
Certs of Tax dep. (£100,000)	3	5¾	5¾	6	6¼

Certs of Tax dep. under £100,000 is 2½pc. Deposits withdrawn for cash 1¼pc. Ave. tender rate of discount 6.5302pc. ECGD fixed rate Stlg. Export Finance. Make up day Sep 29, 1995. Agreed rate for period Oct 25, 1995 to Nov 25, 1995. Schemes II & III 8.04pc. Reference rate for period Sep 1, 1995 to Sep 29, 1995, Schemes IV & V 6.795pc. Finance House Base Rate 7pc from October 1, 1995

■ THREE MONTH STERLING FUTURES (LIFFE) £500,000 points of 100%

	Open	Sett price	Change	High	Low	Est. vol	Open int.
Dec	93.42	93.45	+0.05	93.46	93.42	14799	101817
Mar	93.52	93.53	+0.07	93.55	93.49	12238	59187
Jun	93.44	93.48	+0.09	93.50	93.43	9521	46762
Sep	93.25	93.28	+0.10	93.30	93.24	4646	34090
Dec	93.02	93.05	+0.11	93.07	93.01	4036	26750

Also traded on APT. All Open interest figs. are for previous day.

■ SHORT STERLING OPTIONS (LIFFE) £500,000 points of 100%

Strike Price	CALLS Dec	CALLS Mar	CALLS Jun	PUTS Dec	PUTS Mar	PUTS Jun
9325	0.29	0.47	0.56	0.09	0.19	0.35
9350	0.14	0.32	0.44	0.19	0.29	0.46
9375	0.06	0.20	0.31	0.36	0.42	0.58

Est. vol. total, Calls 866 Puts 6753. Previous day's open int., Calls 132460 Puts 119433

EMS EUROPEAN CURRENCY UNIT RATES

Oct 2	Ecu cen. rates	Rate against Ecu	Change on day	% +/- from cen. rate	% spread v weakest	Div. ind.
Netherlands	2.15214	2.10679	+0.00528	-2.11	4.71	16
Belgium	39.3960	38.6911	+0.0929	-1.79	4.37	13
Germany	1.91007	1.88174	+0.0049	-1.48	4.04	15
Austria	13.4383	13.2417	+0.0359	-1.46	4.02	11
Spain	162.493	162.087	-0.572	-0.25	2.76	2
Denmark	7.28580	7.29141	-0.00433	0.08	2.42	-1
Portugal	195.792	196.769	-0.395	0.50	1.99	-3
France	6.40608	6.48176	+0.00215	1.18	1.30	-10
Ireland	0.792214	0.812024	-0.00386	2.50	0.00	-17
NON ERM MEMBERS						
Greece	292.867	305.947	+0.168	4.47	-1.88	-
Italy	2106.15	2112.68	-12.26	0.31	2.18	-
UK	0.786652	0.828428	-0.006045	5.31	-2.67	-

Ecu central rates set by the European Commission. Currencies are in descending relative strength. Percentage changes are for Ecu; a positive change denotes a weak currency. Divergence shows the ratio between two spreads: the percentage difference between the actual market and Ecu central rates for a currency, and the maximum permitted percentage deviation of the currency's market rate from its Ecu central rate.
(17/9/92) Sterling and Italian Lira suspended from ERM. Adjustment calculated by the Financial Times.

■ PHILADELPHIA SE £/$ OPTIONS £31,250 (cents per pound)

Strike Price	CALLS Oct	CALLS Nov	CALLS Dec	PUTS Oct	PUTS Nov	PUTS Dec
1.540	4.47	4.80	5.29	-	0.48	0.98
1.550	3.53	4.00	4.57	0.04	0.68	1.27
1.560	2.65	3.27	3.91	0.16	0.95	1.60
1.570	1.91	2.62	3.31	0.37	1.22	2.00
1.580	1.25	2.09	3.03	0.71	1.64	2.21
1.590	0.75	1.60	2.76	1.22	2.16	2.45

Previous day's vol., Calls N/A Puts N/A . Prev. day's open int., Calls N/A Puts N/A

■ THREE MONTH EURODOLLAR (IMM) $1m points of 100%

	Open	Latest	Change	High	Low	Est. vol	Open int.
Dec	94.21	94.19	-0.02	94.21	94.18	96,235	428,405
Mar	94.33	94.33	-0.01	94.34	94.30	147,336	357,412
Jun	94.28	94.26	-0.02	94.29	94.25	86,790	240,559

■ US TREASURY BILL FUTURES (IMM) $1m per 100%

	Open	Latest	Change	High	Low	Est. vol	Open int.
Dec	94.76	94.74	-0.02	94.76	94.73	1,484	14,089
Mar	94.81	94.33	-0.01	94.82	94.81	591	3,571
Jun	-	94.26	-0.02	-	-	16	147

All Open interest figs. are for previous day

■ EUROMARK OPTIONS (LIFFE) DM1m points of 100%

Strike Price	CALLS Oct	CALLS Nov	CALLS Dec	CALLS Mar	PUTS Oct	PUTS Nov	PUTS Dec	PUTS Mar
9600	0.07	0.11	0.14	0.26	0.03	0.07	0.10	0.16
9625	0.01	0.02	0.05	0.14	0.22	0.23	0.26	0.29
9650	0	0.01	0.02	0.07	0.46	0.47	0.48	0.47

Est. vol. total, Calls 4113 Puts 2622. Previous day's open int., Calls 227768 Puts 217636

■ EURO SWISS FRANC OPTIONS (LIFFE) SFr 1m points of 100%

Strike Price	CALLS Dec	CALLS Mar	CALLS Jun	PUTS Dec	PUTS Mar	PUTS Jun
9750	0.21	0.29	0.29	0.09	0.15	0.30
9775	0.09	0.17	0.17	0.22	0.28	0.43
9800	0.04	0.08	0.09	0.42	0.44	0.59

Est. vol. total, Calls 0 Puts 0. Previous day's open int., Calls 5125 Puts 800

BASE LENDING RATES

	%		%		%
Adam & Company	6.75	Duncan Lawrie	6.75	* Roxburghe Guarantee Corporation Limited is no longer authorised as a banking institution.	10
Allied Trust Bank	6.75	Exeter Bank Limited	7.75	Royal Bk of Scotland	6.75
AIB Bank	6.75	Financial & Gen Bank	7.50	●Singer & Friedlander	6.75
●Henry Ansbacher	6.75	●Robert Fleming & Co	6.75	●Smith & Williamson Secs.	6.75
Bank of Baroda	6.75	Girobank	6.75	TSB	6.75
Banco Bilbao Vizcaya	6.75	●Guinness Mahon	6.75	United Bank of Kuwait	6.75
Bank of Cyprus	6.75	Habib Bank AG Zurich	6.75	Unity Trust Bank Plc	6.75
Bank of Ireland	6.75	●Hambros Bank	6.75	Western Trust	6.75
Bank of India	6.75	Heritable & Gen Inv Bk.	6.75	Whiteaway Laidlaw	6.75
Bank of Scotland	6.75	●Hill Samuel	6.75	Yorkshire Bank	6.75
Barclays Bank	6.75	C. Hoare & Co	6.75		
Brit Bk of Mid East	6.75	Hongkong & Shanghai.	6.75	● Members of London Investment Banking Association	
●Brown Shipley & Co Ltd	6.75	Julian Hodge Bank	6.75	* In administration	
Citibank NA	6.75	●Leopold Joseph & Sons	6.75		
Clydesdale Bank	6.75	Lloyds Bank	6.75		
The Co-operative Bank	6.75	Meghraj Bank Ltd	6.75		
Coutts & Co	6.75	Midland Bank	6.75		
Credit Lyonnais	6.75	* Mount Banking	6.75		
Cyprus Popular Bank	6.75	NatWestminster	6.75		
		●Rea Brothers	6.75		

LONDON SHARE SERVICE

BANKS, MERCHANT

	Notes	Price	+ or –	1995 high	low	Mkt Cap£m	Yld Gr's	P/E
Barings 8pc Cu 2nd Prf.		50½xd	—	99	60¼	6.31	19.8	–
9¼pc Non-Cum Prf		4¼	—	118½	3	1.90	–	–
Cater Allen		482	-6	525	418	160.4	7.4	7.4
Close Bros		323xr	-1	*340½	216¼	373.4	3.4	[illegible]
Gerrard & Nat		467	—	490	385	223.0	6.2	14.8
Hambros		195	+1	253	180	347.1	4.6	49.4
7½pc Cv Pf		104xd	—	112	94	134.0	8.0	–
Joseph (L)		435	—	465	353	23.1	5.1	34.3
King & Shaxson		137	-1	145	85	35.2	8.2	10.6
Rea Brothers		47	—	67	47	22.9	2.7	18.8
Schroders		1365xd	—	*1478	905¼	2,046	1.3	19.3
N/V		1125xd	—	*1189	823¼	485.0	1.6	16.0
Singer & Fried		107xd	—	110	81	210.5	4.3	11.1
Union		115	—	121	70	30.6	3.3	–
Wintrust		295xd	—	295	200	20.1	4.8	16.9

BANKS, RETAIL

BREWERIES

BUILDING & CONSTRUCTION

BUILDING MATS. & MERCHANTS

CHEMICALS

DISTRIBUTORS

DIVERSIFIED INDUSTRIALS

ELECTRICITY

ELECTRONIC & ELECTRICAL EQPT

ELECTRONIC & ELECTRICAL EQPT - Cont.

ENGINEERING

ENGINEERING, VEHICLES

EXTRACTIVE INDUSTRIES

EXTRACTIVE INDUSTRIES - Cont.

FOOD PRODUCERS

GAS DISTRIBUTION

HEALTH CARE

HOUSEHOLD GOODS

INSURANCE

INVESTMENT TRUSTS

INVESTMENT TRUSTS - Cont.

INV TRUSTS SPLIT CAPITAL

INV TRUSTS SPLIT CAPITAL - Cont.

[illegible]

OTHER INVESTMENT TRUSTS

[illegible]

INVESTMENT COMPANIES

[illegible]

LEISURE & HOTELS

[illegible]

LIFE ASSURANCE

[illegible]

MEDIA

[illegible]

OIL EXPLORATION & PRODUCTION

[illegible]

OIL, INTEGRATED

[illegible]

OTHER FINANCIAL

[illegible]

OTHER SERVICES & BUSINESSES

[illegible]

PAPER, PACKAGING & PRINTING

[illegible]

PHARMACEUTICALS

[illegible]

PROPERTY

[illegible]

PROPERTY - Cont.

[illegible]

RETAILERS, FOOD

[illegible]

RETAILERS, GENERAL

[illegible]

SPIRITS, WINES & CIDERS

[illegible]

SUPPORT SERVICES

[illegible]

SUPPORT SERVICES - Cont.

[illegible]

TELECOMMUNICATIONS

[illegible]

TEXTILES & APPAREL

[illegible]

TOBACCO

[illegible]

TRANSPORT

[illegible]

WATER

[illegible]

AIM

[illegible]

AIM - Cont.

[illegible]

AMERICANS

[illegible]

CANADIANS

[illegible]

SOUTH AFRICANS

	Notes	Price	+ or –	1995 high	1995 low	Mkt Cap£m	Yld Gr's	P/E
Anglo Am Ind		£31¾		£34	£29	2,109	2.6	Φ
Barlow	♣	£7⅛	+⅛	£7⅛	£4⅞	1,423	1.4	26.3
Gold Flds Prop R		144xd	–2	152	118	14.7	7.2	6.6
NK Props		86		95	85	3.48	13.4	–
SASOL	♥	583	–22	646	435	2,845	2.7	–
SA Brews		£19¼		£20	£12⅞	5,835	1.7	Φ
Standard Bank	☐	£21¼	–⅛	£23⅞	£20⅛	2,640	2.1	15.1
Tiger Oats		915	–25	980	700	1,378	1.6	22.3
Tongaat-Hulett	†n	775		835	636	706.3	1.8	23.4

GUIDE TO LONDON SHARE SERVICE

Prices for the London Share Service delivered by FT Extel, a member of the Financial Times Group.

Company classifications are based on those used for the FT-SE Actuaries Share Indices.

Closing mid-prices are shown in pence unless otherwise stated. Highs and lows are based on intra-day mid- prices.

Where stocks are denominated in currencies other than sterling, this is indicated after the name.

Symbols referring to dividend status appear in the notes column daily as a guide to yields and P/E ratios. Dividends and Dividend covers are published on Monday.

Market capitalisation shown is calculated separately for each line of stock quoted.

Earnings used in calculations are based on IIMR 'Headline Earnings' formula.

Price/earnings ratios are based on latest annual reports and accounts and, where possible, are updated on interim figures.

Yields are based on mid-prices, are gross, adjusted for a dividend tax credit of 20 per cent and allow for value of declared distribution and rights.

Estimated Net Asset Values (NAVs) are shown for Investment Trusts, in pence per share, along with the percentage discounts (Dis) or premiums (Pm -) to the current closing share price. The NAV basis assumes prior charges at par value, convertibles converted and warrants exercised if dilution occurs.

☐ Indicates the most actively traded stocks. This includes UK stocks where transactions and prices are published continuously through the Stock Exchange Automated Quotation system (SEAQ) and non-UK stocks through the SEAQ International system.
• Highs and lows marked thus have been adjusted to allow for capital changes
† Interim since increased or resumed
‡ Interim since reduced, passed or deferred
Φ Figures or report awaited
♥ Rule 2.1(a)(iv) Overseas Incorporated companies listed on an approved exchange.
♣ Free annual/interim report available, see details below.
☨ USM; not listed on Stock Exchange and company not subjected to same degree of regulation as listed securities
‡‡ Rule 4.2(a) Irish incorporated non-listed companies.
╪ Price at time of suspension
¶ Indicated dividend yield after pending scrip and/or rights issue.
♦ Merger bid or reorganisation in progress
§ Forecast dividend yield; p/e based on earnings updated by latest interim statement.
♠ Unregulated collective investment scheme

a Yield based on annualised dividend
b Figures based on prospectus or other official estimates.
g Assumed dividend yield after rights issue.
h Assumed dividend yield after scrip issue.
n Rights issue pending
q Earnings based on preliminary figures.
s Dividend yield excludes a special payment.
t Indicated dividend yield, p/e ratio based on latest annual earnings.
u Forecast, or estimated annualised dividend yield, p/e based on previous year's earnings
v P/e ratios are calculated under new ACT guidelines.
z Dividend yield includes a special payment
F Yield based on prospectus or other official estimates for 1994-95.
G Assumed yield after pending scrip and/or rights issue
H Yield based on prospectus or other official estimates for 1995.
K Yield based on prospectus or other official estimates for 1994
L Estimated annualised yield, p/e based on latest annual earnings.
M Yield based on prospectus or other official estimates for 1995-96.
R Forecast annualised yield, p/e based on prospectus or other official estimates.
W Pro forma figures.
Z Dividend yield to date.

Abbreviations:
xd ex dividend;
xc ex scrip issue;
xr ex rights;
xa ex all;
xi ex capital distribution

This service is available to companies whose shares are regularly traded in the United Kingdom for a fee of £1275 a year for each security shown, subject to the Editor's discretion

♣ FT Free Annual Reports Service

You can obtain the current annual/interim report of any company annotated with ♣. Please quote the code FT4935. Ring 0181 770 0770 (open 24 hours including weekends) or Fax 0181 770 3822. Reports will be sent the next working day, subject to availability.

Both Annual Reports and FT Company Focus are available from the above number.

☨ FT Company Focus

Comprehensive 10-14 page report available on this company, containing key FT stories from the last year, latest survey of City profit forecasts and investment recommendations, 5 year financial and share price performance review, balance sheet and profit and loss data, plus recent Stock Exchange announcements for £6.45.

To order, call 0121 200 4678.

Reports published by ShareFinder Ltd.

FT Cityline

Up-to-the-second share prices are available by telephone from the FT Cityline service. See Monday's share price pages for details.

An international service is available for callers outside the UK, annual subscription £250 stg.

Call 0171 873 4378 for more information on FT Cityline.

For readers phoning from outside UK, please dial +44 in place of the first 0.

FT MANAGED FUNDS SERVICE

● FT Cityline Unit Trust Prices are available over the telephone. Call the FT Cityline Help Desk on (+44 171) 873 4378 for more details.

OFFSHORE AND OVERSEAS

BERMUDA (SIB RECOGNISED)

	Init Chge	Notes	Selling Price	Buying Price	+ or -	Yield Gr's
Fidelity Currency Funds Ltd						
Pembroke Hall, Pembroke, Bermuda						
UK Prof Advisers 0800 414181 / Jersey: 01534 71696						
Private Clients 0800 414181 / 00 352 250404230						
From O'seas (44) 1732 777377 / Hong Kong (852) 848 1000						
A$ Accum			[illegible]		[illegible]	[illegible]
HK$ Accum			HK$115.30		-0.01	5.80
Yen Accum			[illegible]		—	[illegible]
Prices for dealing October 2						
Jupiter Tyndall (Bermuda) Ltd						
PO Box HM1256, Hamilton, Bermuda / 001 809 292 2760						
Eurobond			$15.51	16.29		2.82
UK Small Cos			£1.14	1.21		10.00
Newport Investment Management						
73 Front street, Hamilton, Bermuda						
Newport Tiger Fd			£4.1170		[illegible]	—

BERMUDA (REGULATED)(**)

GUERNSEY (SIB RECOGNISED)

	Init Chge	Notes	Selling Price	Buying Price	+ or -	Yield Gr's
Royal Bk of Canada O/S Fd Mgrs Ltd						
PO Box 246, St Peter Port, Guernsey / 01481 723021						
Sterling Global			£10.449		—	—
Sarasin Funds Mngmt (Guernsey) Ltd						
PO Box 248, St Peter Port, Guernsey / 01481 723021						
Schroder Investment Mngmt (Guernsey) Ltd						
PO Box 255, St Peter Port, Guernsey / 01481 710851						

GUERNSEY (REGULATED)(**)

	Selling Price	Buying Price	+ or -	Yield Gross
ANZ Mngmt Co (Guernsey) Ltd				
Emerging Mkts Liquid Inv Ptfolio	$12.57	14.34	+0.36	—
Apollo Investment Management Ltd				
Japan	£12.164	12.898	—	—
Tiger	£10.741	11.457	—	—
Arab Bank Fund Managers (Guernsey) Ltd				
AB International Fund Ltd				
Managed Currency	$11.15	11.19	—	—
International Bond	$11.24	11.28	—	—
Bachmann Global Investment Fund Ltd				
CIBC Fund Managers (Guernsey) Ltd				

IRELAND (SIB RECOGNISED)

IRELAND (REGULATED)(**)

ISLE OF MAN (REGULATED)(**)

ISLE OF MAN (SIB RECOGNISED)

JERSEY (SIB RECOGNISED)

JERSEY (REGULATED)(**)

LUXEMBOURG (SIB RECOGNISED)

LUXEMBOURG (REGULATED)(**)

هكذا من الأصل

FT MANAGED FUNDS SERVICE

● FT Cityline Unit Trust Prices are available over the telephone. Call the FT Cityline Help Desk on (+44 171) 873 4378 for more details.

OTHER OFFSHORE FUNDS

OFFSHORE INSURANCES

MANAGED FUNDS NOTES

LONDON STOCK EXCHANGE

MARKET REPORT

Equities respond to renewed bid talk in utilities

By Steve Thompson,
UK Stock Market Editor

The takeover fever that has encompassed the utilities areas of the UK stock market throughout the summer period showed no signs of abating yesterday. The expected bid for Southern Electricity was followed by intense speculation that this morning could witness at least one new bid and an increased offer.

After confirmation of National Power's move on Southern the spotlight shifted to London Electricity, whose shares rocketed on talk that a bid is imminent. An increased offer for Norweb from the US was also thought a possibility, while Northumbrian Water jumped again as the market became increasingly of the view that a bid from Lyonnais des Eaux is around the corner.

The news and rumours emanating from the utilities sectors more than offset what were seen as worrying signals from across the Atlantic, where the day's economic news prompted an early and sizeable sell-off on Wall Street.

At the end of an intriguing trading session in London, the FT-SE 100 index was left with a healthy 12.0-point gain at 3,520.2.

The second-tier FT-SE Mid 250 underperformed the leading index, posting a 10.1 improvement at 3,958.9, in spite of widespread heavy gains in many of the water and electricity issues which figure prominently in the index.

The takeover frenzy in the market was by no means confined to utilities. Dealers pointed to numerous developing bid situations in the market, notably for Gartmore, the investment management group, where specialists point to a long list of potential buyers of Banque Indosuez's 75 per cent stake.

An increased offer from Rhône-Poulenc Rorer for Fisons, the pharmaceuticals group, was also said to be on the cards for this week.

A more speculative area of the market being lifted by bid rumours was the computer software sector, where companies such as Virtuality and Superscape spiralled higher on talk that some big global electronics groups could be looking to take out the small specialists companies.

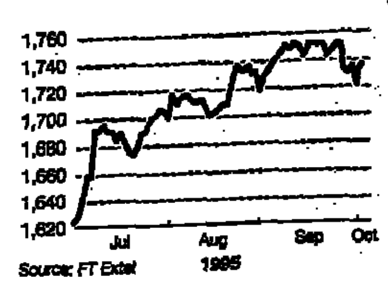
Earlier, the market had struggled to make progress, relinquishing an initial modest rise of around two points to display a five-point decline in mid-morning. This was attributed to the latest UK purchasing managers index for September, which indicated a continuing slowdown in economic growth.

And with Wall Street coming in under pressure – the Dow Industrial Average was down about 20 points shortly after US trading commenced – the FT-SE 100 remained in negative territory until the latest bid stories in the Recs picked up.

Marketmakers said the market would have been in even better form except for Wall Street and pointed to evidence that the money from Hanson's bid for Eastern, and some of the cash from the Scottish Power buying of Manweb stock, had been pushed into the market yesterday. "There could well be 30 to 40 points upside in the market short term," said a senior trader.

Turnover of 637m was inflated by huge activity in one of the market's penny stocks, Anglo United, which accounted for 21 per cent of the overall figure. Retail business on Friday was a respectable £1.61bn.

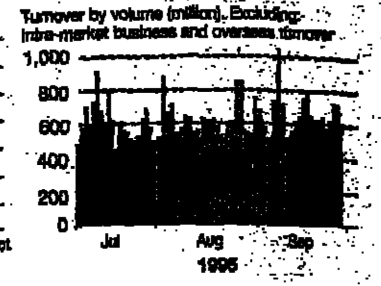
FT-SE-A All-Share Index



Source: FT Extel

Equity shares traded

Turnover by volume (million). Excluding intra-market business and overseas turnover



Indices and ratios

FT-SE 100	3520.2	+12.0
FT-SE Mid 250	3958.9	+10.1
FT-SE-A 350	1758.9	+5.6
FT-SE-A All-Share	1738.89	+5.16
FT-SE-A All-Share yield	3.84	(3.85)
FT Ordinary index	2607.5	+6.0
FT-SE-A Non Fins p/e	17.08	(16.97)
FT-SE100 Fut Dec	3558.0	+22.0
10 yr Gilt yield	8.03	(8.12)
Long gilt/equity yld ratio:	2.17	(2.17)

Best performing sectors

1. Water ... +2.7
2. Extractive Inds. ... +1.4
3. Pharmaceuticals ... +0.8
4. Transport ... +0.7
5. Media ... +0.6

Worst performing sectors

1. Gas Distribution ... -0.6
2. Other Servs & Bus. ... -0.4
3. Health Care ... -0.3
4. Spirits, Wines & Cids ... -0.3
5. Household Goods ... -0.2

Bid focus remains on Recs

Bid focus started and finished in the electricity sector yesterday. In early dealing, National Power revealed its widely flagged offer for Southern Electric. And, shortly before the close, shares in London Electricity shot forward more than 6 per cent, signposting the Metropolitan company as the next one to fall.

However, marketmakers also had waters on the brain and cash poured into that sector attracted by the likelihood of an offer for Northumbrian Water by *Lyonnaise* des Eaux, of France.

Also, Thames Water was seen *as one suitor mooted to* bid for London. Dealers pointed out that, in an area where property prices are at a premium, it could save cash by merging the head offices. It could also cut costs in meter reading, billing and customer services.

Thames was regarded as the most likely bidder in a list that includes Pacific Gas & Electric, Florida Power and Electric, and RWE, of Germany.

During the last few minutes of trading, London Electricity's share price ticked sharply higher. At the close the shares were up 55 or 6.36 per cent at 920p. At that price they are some 30p to 50p below the range of estimated take-out prices. Analysts suggested that within the current climate that scale of movement would, at the very least, be bound to prompt a Stock Exchange directive to the company to reveal whether it knew of any reasons for the movement.

"London has been romping *away in very much the same* way as Southern, which had a bid yesterday morning, did on *Friday*," said one dealer.

Thames ended 15 higher at 1013p. Southern gained 69 at 966p on turnover of 25m shares after the 1010p a share bid from National Power, which closed 12½ off at 503¼p. Northumbrian rose 18 to 1013p.

The rest of the waters sector was further lifted by cash pouring in from former Eastern Electricity shareholders following the Hanson bid.

Vodafone slips

Mobile phones group Vodafone closed 4 lower at 261¼p, with 5.5m shares traded, as *new subscriber numbers for* the 1995 third quarter fell short of market expectations.

Net new connections were 148,000 for the three months to September, compared to market estimates that ranged from 150,000 to 200,000, and 220,000 in the seasonally most active 1995 second quarter.

Analysts said the UK market leader had stood aside from the heavy promotion push being undertaken by competing operators in the run-up to the important Christmas selling period. Some telecoms teams saw this as a move by Vodafone to weed out some of its more marginal business.

Zeneca peaks

Pharmaceuticals giant Zeneca saw its shares hit a new high after jumping 30 to 1175p. The company has been seen as a possible bid target for some time. However, a catch-up with the ratings of US rivals and a technical squeeze *in London may have been* more plausible reasons for the rise. As the market closed there was also an announcement that results from the first phase three clinical trial of Zeneca's Seroquel drug show the drug should offer substantial benefits in the management of schizophrenia.

British Biotech surged another 43 to 908p ahead of a key research and development presentation to analysts in London today.

Investment management group Gartmore bounded forward for the second trading day in a row as speculation *increased that a bidder would* emerge.

Rumours were sparked on Friday after majority stakeholder Banque Indosuez announced that it was selling its 75 per cent holding. Analysts said the possible interested parties included Prudential, off a penny at 377p, and *National Westminster, which* fell 7 to 625p after a good run.

Guardian Royal Exchange shed 4 to 214p, with UBS believed to be offering a line of 1m shares around the market.

Abbey National improved 5 to 546p as NatWest Securities and SBC Warburg reiterated their buy stances.

Hardy Oil & Gas, seen both as prey and predator within the exploration and production area of the oil sector, jumped 12 to 186p on turnover of 1.5m.

Motor parts engineer Lucas Industries dipped a penny to 195p on the news that heavier than expected provisions will *be needed to resolve its* long-standing defence contract dispute with the Pentagon.

Most analysts saw the announcement in a positive light. "This is an attempt to wipe the slate clean ahead of next *Monday's full-year results* statement," said one trader. Smith New Court moved from *hold to buy on the shares.*

Traders said a two-way pull had developed at one stage as talk turned to the possibility of Lucas cutting its dividend. But most analysts felt Lucas had the balance sheet strength to maintain the payment.

Profits *downgrades* from ABN-Amro Hoare Govett and Panmure Gordon left materials handling and mining engineer FKI 5 lower at 171p.

Eurotunnel raced to the head of the FT-SE Mid 250 performance charts as rumours of *imminent management* changes reached the market. Up 6 on Friday, the shares put *on a further 6 to 96p in turn*over of 1.7m. In Paris, almost 5m shares changed hands.

The Channel tunnel operator, due to announce September traffic figures and interim results this week, is currently negotiating a rescheduling of its £8bn of borrowings.

Satellite broadcaster BSkyB added 14 at 396p on talk that it is about to raise prices.

Media conglomerate Pearson recovered 8 to 597p after Henderson Crosthwaite, the agency broker, said it was worth £5bn or 900p a share.

Housebuilder Barratt Developments shed 5 to 189p as stories about the company stepping up its customer incentives in order to counter weak unit sales circulated among construction analysts.

Tarmac was said to have been the subject of a broker sell note. The shares ended 2 lower at 92p. In contrast, brickmaker *Ibstock* firmed 3½ *to* 71p ahead of today's interim results.

In leisures, First Choice Holidays tumbled 18 to 70p after the company disappointed the *market with a warning that* profits this year will drop to around £1m, against £16.3m a year earlier.

Rival tour operator Airtours *moved lower in sympathy,* closing 8 easier at 378p.

The market was cheered by *news from London Clubs* International that it had acquired the two companies that together own the lease and business of the London Park Tower Casino. The stock advanced 12 to 414p.

Manchester United improved 5 to 211p ahead of today's final figures. Bargain hunting helped Granada Group harden 5 to 640p. Regent *Inns* was once again in demand and the shares climbed 14 to 592p. Profit-taking left Grand Metropolitan 5 lighter at 440p.

Bumper figures from Moss Bros saw the shares improve 7 to 570p. The dividend was raised from 3p to 5p.

Textiles group Hicking Pentecost softened a penny to 253p after announcing a £14.5m purchase in the US.

MARKET REPORTERS:
Peter John,
Joel Kibazo,
Jeffrey Brown.

FINANCIAL TIMES EQUITY INDICES

	Oct 2	Sep 29	Sep 28	Sep 27	Sep 26	Yr ago	*High	*Low
Ordinary Share	2607.5	2601.5	2586.6	2587.5	2614.5	2320.3	2668.5	2238.3
Ord. div. yield	4.11	4.12	4.14	4.14	4.10	4.43	4.73	4.02
P/E ratio net	15.69	15.64	15.56	15.55	15.69	17.46	21.33	15.47
P/E ratio nil	15.46	15.46	15.38	15.38	15.51	17.50	22.21	15.25

*For 1995. Ordinary Share Index since compilation: high 2713.6 2/02/94; low 49.4 26/6/40
FT Ordinary Share Index base date 1/7/35.

Ordinary Share hourly changes

Open	9.00	10.00	11.00	12.00	13.00	14.00	15.00	16.00	High	Low
2603.1	2599.1	2597.3	2597.0	2598.6	2599.9	2600.9	2600.2	2607.3	2608.1	2596.5

	Oct 2	Sep 29	Sep 28	Sep 27	Sep 26	Yr ago
SEAQ bargains	28,948	26,199	26,146	26,538	25,484	23,301
Equity turnover (£m)†	-	1606.1	2122.4	3030.5	1462.5	1138.9
Equity bargains†	-	31,260	30,776	30,446	30,488	25,436
Shares traded (ml)†	-	611.5	726.3	730.4	613.8	485.2

†Excluding intra-market business and overseas turnover.

London market data

Rises and falls*		1995 Highs and lows		LIFFE Equity options	
Total Rises	665	Total Highs	111	Total contracts	31,155
Total Falls	588	Total Lows	38	Calls	9,552
Same	1,715			Puts	21,603

Oct. 2 *Data based on Equity shares listed on the London Share Service.

FUTURES AND OPTIONS

FT-SE 100 INDEX FUTURES (LIFFE) £25 per full index point (APT)

	Open	Sett price	Change	High	Low	Est. vol	Open int.
Dec	3541.0	3558.0	+22.0	3559.0	3522.0	7714	62617
Mar	-	3591.0	+22.0	-	-	0	2293
Jun	-	3595.0	+22.0	-	-	0	60

FT-SE MID 250 INDEX FUTURES (LIFFE) £10 per full index point

	Open	Sett price	Change	High	Low	Est. vol	Open int.
Dec	-	3985.0	+10.0	-	-	0	3538

FT-SE 100 INDEX OPTION (LIFFE) (*3518) £10 per full index point

	3350 C	3350 P	3400 C	3400 P	3450 C	3450 P	3500 C	3500 P	3550 C	3550 P	3600 C	3600 P	3650 C	3650 P	3700 C	3700 P
Oct	188	4	141½	7	98	12½	59½	24	30½	46½	12½	82½	4	130½	1½	180½
Nov	209	13	167	21	127	31½	92	47	63	69½	39	97½	21½	134½	11	180½
Dec	229	24½	190½	35	153	48	121	66½	90	87	66½	114½	46	147½	31½	186
Jan			211	48½			145	82½			92½	131½			54	198
Jun†			275½	97			211	131			160½	178½			115	235½

Calls 1,676 Puts 12,874

EURO STYLE FT-SE 100 INDEX OPTION (LIFFE) £10 per full index point

	3375 C	3375 P	3425 C	3425 P	3475 C	3475 P	3525 C	3525 P	3575 C	3575 P	3625 C	3625 P	3675 C	3675 P	3725 C	3725 P
Oct	164	4½	118½	9	77	17½	44	34	22	62	9	99	3	142½	1½	190
Nov	183½	13	142½	21½	105½	34½	74	52	48½	76	29½	106½	16	149	8	184½
Dec	210½	30	170	39	134	52	102½	69½	74	90½	51½	117½	34	149½	22	185½
Mar			224½	63½			158	95			105	138			85	195
Jun†			258	85			196	131½			149½	177			166½	230

Calls 780 Puts 3,729 * Underlying index value. Premiums shown are based on settlement prices.
† Long dated expiry months.

LONDON RECENT ISSUES: EQUITIES

Issue price p	Amt paid up	Mkt. cap (£m.)	1995 High	1995 Low	Stock	Close price p	+/-	Net div.	Div. cov.	Grs yld	P/E net
50	F.P.	14.8	71	50	Consolidated Coal	67		-	-	-	-
-	F.P.	5.62	125	120	†Euro Sales Fin	125		-	-	-	-
-	F.P.	6.00	40	25	Hay & Robertson	40	+4	V-	-	-	-
-	F.P.	12.2	80	68	†Inner Workings	73		-	-	-	-
65	F.P.	16.7	89	84	Mayflower	87	+½	2v0.67	2.6	1.0	49.6
-	F.P.	9.73	3¾	3½	Media Business	3¾		-	-	-	-
45	F.P.	17.6	61	52	†MultiMedia	61		V-	-	-	-
-	F.P.	-	101	100	Murray Vct	101		-	-	-	-
-	F.P.	5.30	98	70	†Omnicare	86	+1	Hv1.5	4.0	2.2	14.3
-	F.P.	14.4	61	60	Pemberstone	60		V-	-	-	-
100	F.P.	30.6	104	99	Pictet British	102		-	-	-	-
400	F.P.	3.62	400	400	†Preston Nth End	400		V-	-	-	-
125	F.P.	13.0	133	8½	†SCS Satellite	126		-	-	-	-
149	F.P.	47.8	183	168	Universal Salvage	178		Mv5.07	1.7	3.6	20.8
-	F.P.	-	½	½	Upton & Sthn Wts	½		-	-	-	-

† Alternative Investment Market. For a full explanation of all other symbols please refer to The London Share Service notes.

FT GOLD MINES INDEX

	Sep 29	% chg on day	Sep 28	Year ago	Gross div yield %	P/E ratio	52 week High	52 week Low
Gold Mines Index (34)	1985.73	+0.5	1975.14	2332.49	1.89	-	2332.49	1637.91
Regional Indices								
Africa (16)	2744.76	+0.7	2724.99	3562.30	3.95	25.25	3711.87	2428.19
Australasia (6)	2398.36	+1.1	2373.26	2888.35	2.10	28.57	2851.49	1788.20
North America (12)	1709.53	+0.3	1703.88	1882.64	0.79	49.07	1882.64	1348.18

 Figures in brackets show number of companies. Basis US Dollars. Base Values: 1000.00 31/12/92. † Partial. Latest prices were unavailable for this edition.

FT - SE Actuaries Share Indices — The UK Series

	Oct 2	Day's chge%	Sep 29	Sep 28	Sep 27	Year ago	Div. yield%	Net cover	P/E ratio	Xd adj. ytd	Total Return
FT-SE 100	3520.2	+0.3	3508.2	3479.0	3485.0	2983.5	4.01	2.07	15.05	119.95	1394.18
FT-SE Mid 250	3958.9	+0.3	3948.8	3914.8	3908.9	3449.6	3.45	1.82	19.89	112.35	1538.44
FT-SE Mid 250 ex Inv Trusts	3982.5	+0.3	3970.7	3934.3	3927.5	3441.9	3.58	1.88	18.60	117.52	1547.48
FT-SE-A 350	1758.9	+0.3	1753.3	1738.5	1740.4	1500.2	3.88	2.02	15.93	57.66	1423.69
FT-SE-A 350 Higher Yield	1743.3	+0.3	1737.6	1720.9	1722.2	1497.1	4.97	1.82	13.82	72.94	1170.12
FT-SE-A 350 Lower Yield	1779.7	+0.3	1774.1	1761.3	1763.7	1465.7	2.78	2.39	18.86	41.10	1203.43
FT-SE SmallCap	1970.52	....	1970.43	1969.27	1971.32	1802.35	3.27	1.68	22.68	50.04	1583.26
FT-SE SmallCap ex Inv Trusts	1954.52	....	1954.27	1952.87	1954.00	1774.07	3.49	1.78	20.36	52.35	1578.23
FT-SE-A ALL-SHARE	1738.89	+0.3	1733.73	1720.19	1722.00	1490.83	3.84	2.00	16.30	56.00	1430.48

FT-SE Actuaries All-Share

	Oct 2	Day's chge%	Sep 29	Sep 28	Sep 27	Year ago	Div. yield%	Net cover	P/E ratio	Xd adj. ytd	Total Return
10 MINERAL EXTRACTION(23)	2947.12	+0.2	2940.08	2907.56	2917.69	2642.00	3.63	2.09	15.65	99.12	1232.70
12 Extractive Industries(7)	4283.35	+1.4	4223.90	4167.39	4171.08	3915.75	3.45	2.51	14.41	104.39	1216.58
15 Oil, Integrated(3)	2908.33	....	2908.91	2876.15	2888.51	2578.71	4.04	2.04	15.19	106.40	1247.34
16 Oil Exploration & Prod(13)	1971.82	+0.2	1968.86	1962.24	1964.50	1898.43	2.55	1.48	33.08	49.88	1170.41
20 GEN INDUSTRIALS(278)	1987.83	+0.1	1984.91	1968.41	1977.42	1859.38	4.14	1.81	16.72	66.90	1058.95
21 Building & Construction(36)	923.59	+0.1	922.24	912.58	914.77	1027.70	4.40	1.86	15.31	32.20	754.43
22 Building Matls & Merchs(31)	1740.37	....	1740.62	1715.99	1725.33	1812.32	4.24	2.01	14.67	56.87	855.46
23 Chemicals(23)	2418.10	+0.1	2415.99	2408.06	2418.54	2319.97	3.98	1.83	17.18	79.34	1118.33
24 Diversified Industrials(20)	1793.25	+0.5	1784.58	1780.16	1782.44	1758.78	5.53	1.58	14.34	87.14	974.37
25 Electronic & Elect Equip(36)	2132.25	....	2132.02	2119.14	2127.77	1876.98	3.51	1.93	18.42	58.89	1085.31
26 Engineering(69)	2206.29	+0.1	2204.03	2188.78	2189.17	1793.93	3.29	1.99	19.07	55.11	1308.91
27 Engineering, Vehicles(13)	2664.53	....	2664.52	2663.49	2632.33	2283.61	3.52	0.83	42.55	71.44	1345.92
28 Paper, Pckg & Printing(27)	2923.32	....	2924.47	2912.08	2932.24	2790.79	3.40	2.50	14.70	85.03	1192.18
29 Textiles & Apparel(21)	1606.05	....	1607.56	1604.04	1602.34	1577.88	4.49	1.76	15.79	50.56	950.50
[illegible]											

Hourly movements

[illegible]

FT-SE Actuaries 350 Industry baskets

[illegible]

TRADING VOLUME

Major Stocks Yesterday

	Vol. 000s	Closing price	Day's change
3i†	221	408½	+2
ASDA Group†	2,800	104½	+1
Abbey National†	1,200	546	+4
Albert Fisher	73	53	
Allied Domecq†	434	538	-1
Anglian Water	1,400	589	+20
Argos	224	494	
Argyll Group†	1,600	335	-1
Arjo Wiggins†	301	246	
Assoc. Brit. Foods†	75	687	+2
Assoc. Brit. Ports	190	317	+2½
BAA†	1,300	502	+2
BAT Inds.†	1,300	529	
BET	280	134	+1
BICC	863	301	-1
BOC†	622	800	+1
[illegible]			

هكذا من الأصل

WORLD STOCK MARKETS

EUROPE

PACIFIC

AUSTRALIA (Oct 2 / Aust$)

		+/-	High	Low	Yld	P/E
Abfoyl	2.67	-.01	3.25	2.45	1.1	....
AdvBnk	9.77	+.03	10.20	8.05	6.7	....
Amcor	9.96xd	+.04	10.98	8.83	3.8	....
Ampolr	2.80	+.02	4.05	2.85	1.7	....
Arnots	9.06	-.19	9.26	8	3.5	34.8
Ashton	1.78	+.01	2.55	1.55	4.5	....
ANZ Bk	5.75	+.08	5.75	4.08	4.3	....
AusFou	2.10	-.03	2.15	1.90	5.0	21.2
AusGLt	4.50	-.10	4.72	4.09	5.8	....
ANI	1.25	—	1.48	1.15	7.2	4.0
BHP	18.22	-.02	20.88	16.88	1.3	28.5
BTR Ny	3.55	...	3.82	2	3.0	9.4
Beacnl	1.15	...	1.35	0.88	..	....
Boral	3.37	+.03	3.77	3.20	6.2	....
BougCp	0.64	+.01	0.79	0.50	..	....
Brmbls	14.58	-.02	14.80	11.40	4.5	36.4
BrosPh	2.80	—	3.50	2.83	6.8	13.3
CSR	4.44	+.04	4.78	4.15	5.8	18.6
CRA	20.78	+.08	22.40	16.20	3.4	—
Caltex	4.25	...	4.55	3	2.4	....
Clyde	1.48xd	-.02	1.80	1.38	8.1	....
CoalAl	14.30	...	14.30	11.50	4.9	....
CCAmat	10.18	+.23	10.18	7.50	1.8	...
ColesM	4.33	+.08	4.60	3.90	6.1	...
Cmalco	6.80	+.05	7.25	4.20	0.9	...
CommBk	10.36xd	+.14	10.92	7.85	7.8	—
Crusdr	1.38	-.04	1.50	1.15	0.4	—
Email	3.80	+.03	3.88	3.25	6.7	18.0
EnResA	4.37	—	7.30	2.70	—	....
FAI	0.60	-.04	0.78	0.60	3.3	0.7
Fairfx	2.75	-.02	3.04	2.48	3.5	....
Fostrs	1.24	-.01	1.32	1.07	5.0	....
GnPrTr	2.29	..	2.53	2.13	7.1	11.4
GIOAus	2.73	-.02	2.85	2.34	8.6	....
GMKalg	1.19	..	1.39	0.81	2.5	2.2
GldFld	3.38	-.05	3.58	3.15	...	....
GdmanF	1.33	-.02	1.37	1.10	8.3	....
HrdieJ	2.22	-.03	2.47	2.02	....	7.2
HrstkG	1.97	-.02	2.02	1.15	...	....
ICIAus	9.95	-.05	10.86	8.70	3.3	38.3
Jenngs	0.09	--	0.10	0.03	--	...
Jupitr	3	...	3.80	2.80	5.8	—
Kidstn	1.85	+.05	2.75	1.70	11.9	....
LendLs	18.82	-.08	19.06	15.46	4.8	35.1
MIM	1.89	-.01	2.22	1.70	2.6	47.2
MaynaN	6.16	-.11	6.62	5.43	5.7	18.1
McPhsn	0.12	....	0.25	0.11	...	0.6
MetlMf	3.12	+.02	3.32	2.30	4.5	....
NAB	11.78	+.08	12.72	10.16	6.3	19.7
NatCon	0.81	-	1.10	0.78	7.4	2.8
Nwcrst	5.70	-.10	6.94	4.22	2.2	....
NewsCp	7.33	-.03	8.42	4.60	0.4	6.9
NormMn	1.70	-.04	2	1.44	2.1	....
North	3.75	-.05	3.97	2.74	3.5	—
OPSM	2.19xd	-.01	2.34	1.75	5.0	—
Orbitl	1.46	-.04	1.61	1.08	...	....
PacDun	3.29	...	3.56	2.25	6.8	....
PacMag	2.74	-.02	3.02	2.40	8.0	...
Pemmco	1.56	+.01	1.88	1.20	1.3	....
Pionln	3.46	-.04	3.86	2.90	4.9	14.4
Plutnc	6.71	-.14	6.95	4.70	0.9	..
PosGld	2.48	+	3.10	1.85	2.0	...
PubBr	4.11	—	4.35	3.19	3.4	....
QBE In	6.66xd	+.03	6.10	4.42	4.8	....
QCT Re	1.85	...	1.74	1.24	6.5	...
QNI	2.69	-.05	2.92	1.80	3.7	..
RosnGd	5.33xd	+.02	5.70	3.90	1.9	..
Rothmn	5	-.05	5.75	4.29	...	.

NORTH AMERICA

CANADA

TORONTO (Oct 2 / Can $)

4 pm close

AFRICA

SOUTH AFRICA (Oct 2 / Rand)

Prices supplied by Telekurs

NOTES – Prices on this page are as quoted on the individual exchanges and are mostly last traded prices. Highs/Lows are for 1995, except Toronto & Montreal (daily). # Dealings suspended. xd Ex dividend. xc Ex scrip issue. xr Ex rights. xa Ex all. † Priced in US $.

FT FREE ANNUAL REPORTS SERVICE

You can obtain the current annual/interim report of any company annotated with ♣. Please quote the code FT3788. Ring 0181 770 0770 (open 24 hours including weekends) or fax 0181 770 3822. If calling from outside the UK, dial +44 181 770 0770 or fax +44 181 770 3822. Reports will be sent on the next working day, subject to availability.

INDICES

	Oct 2	Sep 29	Sep 28	1995 High		1995 Low	
Argentina							
General (29/12/77)	(u)	14117.71	14076.44	16531.10	2/1	9831.09	9/3
Australia							
All Ordinaries(1/1/80)	2137.7	2135.7	2117.9	2186.80	18/9	1823.38	8/2
All Mining(1/1/80)	978.6	978.6	969.4	1029.50	7/8	795.30	8/2
Austria							
Credit Aktien(30/12/84)	361.01	361.83	358.72	395.42	2/1	350.32	30/3
Traded Index(2/1/91)	976.44	977.59	973.82	1056.31	2/1	834.83	30/3
Belgium							
BEL20 (1/1/91)	1464.30	1461.58†	1457.79	1491.39	2/8	1271.53	9/3
Brazil							
Bovespa (29/12/83)	(u)	46701.0	45667.0	48812.00	19/9	4831.60	8/9
Canada							
Metals Minls♦(1975)	(u)	4858.92†	4848.92	5262.77	21/8	3806.63	1/3
Composite♦ (1975)	(u)	4529.80†	4521.50	4710.30	12/7	3991.41	30/1
Portfolio§§ (4/1/83)	(u)	2213.58†	2216.65	2307.81	12/7	1953.36	30/1
Chile							
IGPA Gen♥(31/12/80)	(c)	5817.6	5791.3	6363.10	11/7	4576.90	9/3
Denmark							
CopenhagenSE(3/1/83)	363.00	362.60	361.48	375.44	25/8	330.01	29/3
Finland							
HEX General(28/12/90)	2191.83	2186.87	2141.22	2332.22	14/8	1855.30	29/3
France							
SBF 250 (31/12/90)	1197.09	1198.64†	1187.76	1322.30	12/5	1154.41	13/3
CAC 40(31/12/87)	1780.71	1788.35†	1767.58	2017.27	12/5	1721.80	13/3
Germany							
FAZ Aktien(31/12/58)	807.47	803.27	797.59	848.76	19/9	768.87	30/3
Commerzbank(1/12/53)	2315.3	2303.8	2284.7	2427.60	19/9	2018.70	30/3
DAX (30/12/87)‡	2205.02	2187.04	2171.92	2317.01	15/9	1910.96	28/3
Greece							
Athens SE(31/12/80)	940.14	949.95	940.76	992.99	4/8	787.15	16/3
Hong Kong							
Hang Seng(31/7/64)	9724.98	9646.34	9600.56	9787.40	15/9	6967.93	23/1
India							
BSE Sens.♥(1979)	(c)	3493.21	3456.52	3932.09	2/1	3015.07	2/5
Indonesia							
Jakarta Comp.(10/8/82)	490.56	493.24	491.94	519.18	11/8	414.21	18/4
Ireland							
ISEQ Overall(4/1/88)	2138.05	2144.60	2132.19	2170.73	15/9	1813.59	23/1
Italy							
Banca Comm Ital (1972)	618.56	617.39	615.18	680.54	10/2	587.99	23/3
MIB General (2/1/95)	974.0	975.0	971.0	1076.00	10/2	929.00	23/3
Japan							
Nikkei 225 (16/5/49)	17739.84	17913.06	18022.86	19684.04	4/1	14485.41	3/7
Nikkei 300 (1/10/82)	266.45	269.72	268.93	288.19	4/1	222.28	13/6
Topix (4/1/68)	1422.07	1438.16	1435.77	1553.40	4/1	1193.16	13/6
2nd Section (4/1/68)	1865.59	1872.34	1876.74	2130.88	4/1	1441.90	13/6
Malaysia							
KLSE Comp.(4/4/86)	984.12	1000.60	992.16	1086.04	5/6	840.87	24/1
Mexico							
IPC (Nov 1978)	(u)	2392.25	2381.49	2622.21	8/9	1447.52	27/2
Netherland							
CBS TRtnGen(End 83)	503.6	505.0	500.5	511.80	19/9	422.90	23/3
CBS All Shr (End 83)	305.4	306.1†	303.4	311.10	15/9	265.20	23/3
New Zealand							
Cap. 40 (1/7/86)	2107.43	2112.77	2097.27	2155.79	18/5	1901.43	5/1
Norway							
Oslo SE(Ind)(2/1/83)	1274.74	1269.93	1264.86	1291.58	19/9	1036.80	10/3
Philippines							
Manila Comp (2/1/85)	2629.21	2629.25	2645.00	2958.12	10/7	2248.39	27/3
Portugal							
BTA (1977)	2621.4	2606.2†	2600.6	2911.60	9/1	2589.70	25/9
Singapore							
SES All-S'pore(2/4/75)	518.24	517.07	515.27	535.06	5/1	472.90	23/1
South Africa							
JSE Gold (28/9/78)	1503.8♥	1513.7	1502.9	2023.00	2/1	1317.20	19/5
JSE Indl. (28/9/78)	7098.2♥	7113.2	7082.6	7113.20	2/10	6222.00	31/1
South Korea							
KoreaCompEx(4/1/80)**	975.79	987.06	985.87	1027.37	2/1	847.09	27/5
Spain							
Madrid SE (30/12/85)	304.39	305.84	302.54	318.98	13/9	283.30	26/6
Sweden							
AffarsvarldnGen (1/2/37)	1834.5	1842.3	1815.6	1872.10	19/9	1439.80	29/3
Switzerland							
Swiss Bk Ind (31/12/58)	1410.099	1402.12	1395.47	1420.87	19/9	1174.83	13/3
SBC General (1/4/87)	1052.52	1045.73	1041.23	1055.03	25/9	870.58	13/3
Taiwan							
WeightedPr.(30/6/66)**	5045.82	5013.43	(c)	7051.49	5/1	4503.37	14/8
Thailand							
Bangkok SET (30/4/75)	1288.96	1294.23	1292.06	1472.04	10/7	1135.89	16/3
Turkey							
Istanbul Comp.(Jan 1986)	42989.7	41707.6	41094.3	54653.90	21/4	24844.31	23/1
WORLD							
MS Capital Int (1/1/70)§	(u)	704.8*	699.7	704.80	29/9	598.21	23/1
CROSS-BORDER							
Eurotrack 100(26/10/90)	1423.05	1412.87	1405.44	1480.89	15/9	1222.41	13/3
Euro Top-100 (26/6/90)	1284.90	1282.80†	1268.92	1318.68	15/9	1117.34	9/3
JCapelDrgns (31/12/88)	(u)	333.26	331.85	349.47	14/7	282.07	23/1
Barings Emerg.(7/1/92)	(u)	148.98	145.79	159.07	2/1	117.15	10/3

** Sat Sep 30: Taiwan Weighted Price 5093.06; Korea Comp Ex 982.65. Base values of all Indices are 100 except: Australia All Ordinary and Mining – 500; Austria Traded, BEL20, HEX Gen., MIB Gen., SBF250, CAC40, Euro Top-100, ISEQ Overall; Toronto Comp./Metals & Minerals and DAX – all 1,000; JSE Gold – 256.7; JSE 20 Industrials – 264.3; NYSE All Common – 50 and Standard and Poor's – 10. §§ Montreal. ♦ Toronto. (c) Closed. (u) Unavailable. ‡ IBIS/DAX after-hours index: Oct 2 - 2197.01 -4.26.

† Correction. * Calculated at 15.00 GMT. ● Excluding bonds. ‡ Industrial, plus Utilities, Financial and Transportation. ♠ The DJ Indl. index theoretical day's highs and lows are the averages of the highest and lowest prices reached during the day by each stock; whereas the actual day's highs and lows (supplied by Telekurs) represent the highest and lowest values that the index has reached during the day. (The figures in brackets are previous day's). ♥ Subject to official recalculation.

INDEX FUTURES

	Open	Sett Price	Change	High	Low	Est. vol.	Open int.
CAC-40 (200 x Index)							
Oct	1797.0	1788.0	-5.0	1802.0	1781.0	13,034	31,501
Dec	1812.0	1806.5	-	1816.0	1800.0	297	15,330
DAX							
Dec	2221.0	2215.0	-2.00	2230.0	2208.0	11,342	73,462
Mar	2245.5	2235.0	-4.50	2245.5	2230.5	232	1,930
OMX							
Oct	1465.00	1458.00	-3.00	1466.00	1454.00	3,265	18,067
Nov	-	-	-	-	-	-	1,120
SOFFEX							
Oct	3031.0	3039.8	+21.8	3045.0	3027.0	3,568	15,427
Nov	3037.0	3046.2	+21.0	3042.0	3037.0	12	283
S&P 500							
Dec	588.20	587.30	-0.90	588.20	586.50	83,496	182,936
Mar	593.00	592.10	-0.85	593.20	592.10	152	6,457
Nikkei 225							
Dec	17950.0	17700.0	-170.0	17960.0	17680.0	19,294	148,975
Mar	17900.0	17820.0	-140.0	17900.0	17820.0	403	4,761

Open interest figures for previous day.

US INDICES

Dow Jones	Sep 29	Sep 28	Sep 27	1995 High	1995 Low	Since compilation High	Since compilation Low
Industrials	4789.08	4787.64	4782.35	4801.80 (14/9)	3832.08 (30/1)	4801.80 (14/9/95)	41.22 (2/7/32)
Home Bonds	103.09	103.13	103.22	103.75 (13/7)	93.83 (3/1)	108.77 (18/10/93)	54.99 (1/10/81)
Transport	1954.25	1950.80	1922.82	2000.39 (18/9)	1473.19 (3/1)	2000.39 (18/9/95)	12.32 (8/7/32)
Utilities	214.28	214.74	212.50	214.74 (28/9)	183.03 (3/1)	256.46 (31/8/93)	10.50 (8/4/32)

DJ Ind. Day's high 4834.86 (4810.03) Low 4757.65 (4731.64) (Theoretical♠)
Day's high 4818.54 (4787.84) Low 4781.86 (4758.37) (Actual♠)

Standard and Poors	Sep 29	Sep 28	Sep 27	1995 High	1995 Low	Since compilation High	Since compilation Low
Composite ‡	584.41	585.87	581.04	586.77 (20/9)	459.11 (3/1)	586.77 (20/9/95)	4.40 (1/6/32)
Industrials♥	686.52	688.12	683.79	691.27 (20/9)	546.28 (3/1)	691.27 (20/9/95)	3.62 (21/6/32)
Financial	58.33	58.29	58.46	59.33 (29/9)	41.84 (3/1)	59.33 (29/9/95)	8.64 (1/10/74)
NYSE Comp.	313.26	313.29	311.32	314.33 (20/9)	250.73 (3/1)	314.33 (20/9/95)	4.46 (25/4/42)
Amex Mkt Val	544.72	544.28	540.85	553.58 (12/9)	433.12 (6/1)	553.58 (12/9/95)	29.31 (9/12/72)
NASDAQ Cmp	1043.54	1047.06	1026.54	1087.40 (13/9)	743.58 (3/1)	1087.40 (13/9/95)	54.87 (31/10/72)

■ RATIOS

	Sep 29	Sep 22	Sep 15	Year ago
Dow Jones Ind. Div. Yield	2.42	2.42	2.40	2.78
	Sep 27	Sep 20	Sep 13	Year ago
S & P Ind. Div. yield	2.07	2.05	2.07	2.39
S & P Ind. P/E ratio	17.94	18.14	17.85	20.78

■ NEW YORK ACTIVE STOCKS

Friday	Stocks traded	Close price	Change on day
Micron	6,475,200	79½	-3¼
Nat Semi	4,274,300	27⅝	-1⅞
Telefonos	3,429,800	31¼	—
Compaq	3,252,000	48⅞	-1⅛
AT & T	3,177,800	65¾	-½
Texas Insts	2,816,800	79⅝	-2½
McDonalds	2,729,300	38¼	-⅛
Comp Ass	2,686,200	42¼	+¼
IBM	2,595,500	94⅝	...
Digital Equip	2,554,400	45⅝	+⅞

■ TRADING ACTIVITY

● Volume (million)

	Sep 29	Sep 28	Sep 27
New York SE	335.216	367.613	410.978
Amex	21.331	22.652	21.198
NASDAQ	474.719	459.901	534.747
NYSE			
Issues Traded	3,015	2,999	3,015
Rises	1,445	1,446	843
Falls	772	784	1,461
Unchanged	798	769	711
New Highs	170	134	78
New Lows	17	31	44

■ TOKYO - MOST ACTIVE STOCKS: Monday, October 2, 1995.

	Stocks Traded	Closing Prices	Change on day
Fujitsu	5.7m	1,230	-20
Sumitomo Prec	4.8m	995	+40
Pacific Metals	4.6m	642	-3
Nip Hag Loan	4.2m	39	-1
Marui	4.1m	1,810	-40
Oki Elect Ind	3.3m	915	-3
Nippon Steel	3.1m	337	-9
Hyogo Bank	2.9m	7	
Jpn Wool Text	2.8m	727	+16
Sega Ent	2.8m	5,770	+100

NEW YORK STOCK EXCHANGE COMPOSITE PRICES

4 pm close October 2

1995 High	Low	Stock	Div	Yld %	P/E	Sls 100s	High	Low	Close Quote	Chng Prev. Close
19	12 1/8	AAR	0.48	2.6	25	33	18 1/4	18 1/8	18 1/4	
46 1/4	35	AMP	0.92	2.4	20	4878	39 1/8	38 1/8	38 1/8	-3/8
80 1/4	53 3/8	AMR			18	5255	72 1/4	70 1/2	70 5/8	-1 1/2
47 7/8	41 3/4	ASA	1.71	4.1	27	791	42 3/8	d41 1/2	41 1/2	-3/4
43 7/8	30 3/4	AbbtL	0.84	2.0	21	7487	42 7/8	42	42 3/4	+1/8
18 7/8	12	Abitibi Pr	0.40	2.2	21	8431	18 1/8	17 3/8	18	+5/8
26 3/4	21	ABM Ind	0.60	2.3	14	81	26 1/2	26 3/8	26 3/8	-1/8
17 1/2	13 1/2	Acptncein			10	312	15 1/2	15 1/4	15 1/4	-1/4
34 3/4	21 7/8	ACE Ltd x	0.56	1.6	8	84	34 1/2	34 1/4	34 1/4	-1/8
9 3/4	8 1/8	ACM Gvt In x	0.90	9.4	8	236	u9 3/4	9 5/8	9 5/8	
7 3/4	6 1/2	ACM GrOpp x	0.66	9.1		78	7 3/8	7 1/4	7 1/4	-1/8
7 1/2	5 3/4	ACM Gvt Sp x	0.75	10.9		422	6 7/8	6 3/4	6 7/8	
8 3/4	7 1/4	ACM Gvt Sc x	0.90	10.4		321	u8 3/4	8 5/8	8 5/8	-1/8
9 1/2	7 5/8	ACM Man x	0.90	10.4		862	8 3/4	8 5/8	8 5/8	-1/8
29 1/4	10 1/4	AcmeCv	0.48	1.8	13	709	27 3/8	26 3/4	26 3/4	
38 3/4	9 1/4	Acme Elect			47	246	9 7/8	9 3/8	9 1/2	-1/4
34 1/2	26	Acordia	0.72	2.9	11	419	26 1/2	d24 1/2	24 5/8	-2 7/8
19 1/4	8 5/8	Actava	0.36	2.1	12	612	18 3/8	17 1/2	17 1/2	-7/8
16 3/4	10 1/8	Acuson			35	74	13 1/2	13 3/8	13 3/8	
18 5/8	*15 5/8*	*Adams Expr*	*0.48*	*2.8*	*D*	*244*	*u18 5/8*	*18 3/8*	*18 1/2*	+1/8
39 7/8	25	AdvMic			8	9531	29 1/4	28 5/8	28 3/4	-3/8
9 3/8	5	Advest Grp	0.16	1.7	17	106	u9 3/8	9 1/8	9 3/8	+1/4
23 3/4	16 1/2	Advo Inc	0.10	0.4	19	1776	u24	23 1/2	23 5/8	-1/8
37 1/4	24 80	Aegon	1.28	3.6	19	57	36 3/8	36	36 1/8	-1/8
5 7/8	3 3/8	Aerfix			9	115	5	4 7/8	5	
75 1/2	46 3/4	AetnaL	2.76	3.9	52	4700	73 3/4	71 1/4	71 3/8	-2
44 3/4	31 7/8	Aflac	0.52	1.3	12	2672	42	41 1/8	41 3/8	-1/8
25 3/4	16	Ahmnsn	0.88	3.4	15	5196	u25 7/8	25 3/8	25 3/4	+3/8
59 1/2	43 7/8	AirPrC x	1.04	2.0	16	1534	52 5/8	51 1/2	51 1/2	-5/8
25 5/8	18 3/8	Airbne Frt	0.30	1.2	22	287	24 1/2	24 1/8	24 1/8	-3/8
30	19 5/8	Airgas Inc			24	149	26 5/8	26	26 1/8	-1/2
18	13 3/8	Airlease x	2.00	11.9	12	48	17	16 3/4	16 7/8	-1/8
35 5/8	24	AirTch			132	8146	30 7/8	30 1/2	30 1/2	-1/8
21 3/8	13 1/2	Alaska Air	0.20	1.3	21	533	15 1/2	15 3/8	15 3/8	-1/4
26 1/2	17 1/8	Albany Intl	0.40	1.7	21	604	23 5/8	23 1/4	23 5/8	+1/4
19 3/4	12 1/4	Albanl	0.22	1.2	23	1933	18 7/8	18 5/8	18 7/8	+1/8
32 1/2	25 7/8	AlbCuB	0.32	1.0	16	74	30 5/8	30 1/4	30 5/8	+1/8
28	23	AlCulvr A	0.32	1.2	19	z100	26 3/8	26 3/8	26 3/8	-1/8
34 1/2	27 1/4	Albtsn	0.52	1.5	19	2157	34 1/8	33 5/8	33 7/8	-1/4
36 5/8	23 3/8	AlcnAl	0.60	1.9	16	1921	32 1/2	31 3/8	31 7/8	-1/2
87 3/4	61 7/8	AlcoSt	1.04	1.2	24	282	84 3/4	84 1/4	84 5/8	-1/8
60 3/4	29 1/2	AlexBrown	0.80	1.4	12	204	58 5/8	58 1/8	58 1/4	-1/8
26 1/8	18 1/2	AlexAl	0.10	0.4	15	538	24 1/4	23 3/4	23 7/8	-3/8
23	18 3/8	Allegh Lud	0.48	2.4	15	932	20 1/2	19 7/8	19 7/8	-1/2
28	21 1/2	AllegP	1.64	6.4	14	1885	25 3/4	25 1/2	25 1/2	
39 3/8	21 1/4	Allen Corr x	0.20	0.6	29	227	36	34 7/8	35	-1 3/4
33 5/8	25 3/4	Allergan	0.48	1.5	33	1252	u33 3/4	33	33	-3/8
20 1/2	15 3/8	Allnce Cap	1.72	8.7	11	79	19 7/8	19 1/2	19 3/4	+1/4
9 7/8	8 3/8	Allnce Gl	0.18	1.9		228	9 5/8	9 1/2	9 1/2	-1/8
30 1/4	23 1/2	Ald Irish	1.11	3.7	10	12	u30 1/4	30	30	
47 1/8	33 3/8	AldSig	0.78	1.8	15	6783	44 1/4	43 1/2	43 5/8	-1/2
10 1/2	9 1/4	Allmer	0.84	8.3		31	10 1/8	10	10 1/8	+1/8
37 1/4	23 1/2	Allstr	0.78	2.2	11	6409	35 3/8	34 3/4	34 3/4	-5/8
31	23 1/4	Altel Crp	0.96	3.2	18	1535	29 7/8	29 1/2	29 7/8	
6 3/8	5	Allwaste			13	934	5 1/8	d4 7/8	4 7/8	-1/4
37 7/8	23 3/4	Alumax			7	2988	34 1/8	33 1/2	33 1/2	-3/4
60 1/4	36 7/8	Alcoa	0.90	1.7	10	6334	53	52	52 3/8	-1/2
26 7/8	18 1/8	Alza Cp A			29	2328	23 3/8	22 5/8	22 3/4	-1/4
7 5/8	5 5/8	AmGovInc x	0.96	14.8		266	6 5/8	6 1/2	6 1/2	-1/8
14 3/4	7 5/8	Am Precis x	0.25	1.9	23	59	13 7/8	13 3/4	13 7/8	
6 7/8	4 1/2	AmaxGd	0.08	1.4	9	1197	6	5 7/8	5 7/8	-1/4
22 1/4	16 3/4	Amcast Ind	0.56	2.9	9	15	19 1/4	19 1/8	19 1/4	
53 1/8	43 3/4	AmdaHs	0.60	1.2	533	2278	48 7/8	47 7/8	48	-5/8
43 1/2	36 5/8	AmBrnd	2.00	4.7	9	2851	42 7/8	42 3/8	42 5/8	+3/8
21	13 3/4	Am Bus Prd	0.56	2.7	14	66	20 7/8	20 5/8	20 3/4	+1/8
7 1/2	6 1/2	Am Cap Inc	0.65	8.7		63	7 3/8	7 3/8	7 3/8	

Continued on next page

NYSE COMPOSITE PRICES

4 pm close October 2

Continued from previous page

16⅞	12⅝	Zero	0.44	2.8	16	77	16⅛	16	16
26	16⅞	Zurn Ind	0.40	1.6	25	382	25⅜	25⅛	25¼
11½	10⅝	Zweig Fund	1.12	10.2		857	11⅛	10⅞	11
9	7⅞	Zweig Tot	0.84	9.7		623	8¾	8½	8⅝

Price data supplied by Telekurs

Yearly highs and lows for NYSE reflect the period from Jan 1 1995. Unless otherwise noted, rates of dividend are annual disbursements based on the latest declaration. Sales figures are unofficial.

d-new yearly low. P/E price-earnings ratio. sls-sales. u-new yearly high. x-ex-dividend or ex-rights. yld-yield. z-sales in full.
≡ Dealings suspended.

FT Free Annual Reports Service
You can obtain the current annual/interim report of any company annotated with ♣. Please quote the code FT3185. Ring 0181 770 0770 (open 24 hours including weekends) or fax 0181 770 3822. If calling from outside the UK, dial +44 181 770 0770 or fax +44 181 770 3822. Reports will be sent on the next working day, subject to availability.

AMEX COMPOSITE PRICES

4 pm close October 2

NASDAQ NATIONAL MARKET

4 pm close October 2

AMERICA

Dow shrugs off gains in bond market

Wall Street

US shares shrugged off bond market gains, showing modest losses in early trading after a round of mixed economic data, *writes Lisa Bransten in New York*.

At 1 pm the Dow Jones Industrial Average was off 14.81 at 4,774.27, the Standard & Poor's 500 stood 0.77 easier at 583.64 and the American SE composite 2.47 down at 542.25. New York SE volume came to 161m shares.

The benchmark 30-year Treasury bond jumped ¾ of a point in morning trading after the National Association of Purchasing Management said that its index of business activity was 48.3 per cent in September – above August's 46.9 but below economists' expectations of 50 per cent.

But inflation-wary bond investors ignored figures from the Commerce Department showing that consumer spending rose 1 per cent in August to reverse the 0.1 per cent decrease in July. Since the second quarter, economists and officials from the Federal Reserve had been looking for gains in consumer spending to help inject some vigour into the economy.

The Nasdaq composite, weighted towards technology, slipped 5.75 to 1,037.79. Semiconductor shares showed weakness, with Novellus Systems down $1¾ at $68¼ and VLSI Technology off $1⅛ at $33⅛. On the NYSE, Micron Technology shed $1 to $78½.

One factor adding to the stock market's bearish tone was the string of warnings from companies that their third-quarter performance might not live up to market expectations.

Late on Friday Acordia, the US insurer, forecast third and fourth-quarter earnings of about 20 cents and 60 cents a share respectively, compared with analysts' projections of 45 cents and 77 cents a share. In early trading, Acordia fell $2⅜ or 8.6 per cent to $25⅛.

Sharp declines in AT&T, off $1 at $64⅝, Caterpillar, $1¼ at $55⅝, United Technologies, $1⅛ at $87¼, and Sears Roebuck, $1 at $35⅞, caused the Dow to underperform the more broadly traded S&P 500.

The Dow did, however, get some support from Merck, which moved ahead $1⅛ to $57⅛ on news that the US Food and Drug Administration had given the company approval to market Fosamex, a drug to treat osteoporosis in post-menopausal women.

Canada

Toronto was weak in light midday trade as investors braced themselves for a mixed bag of third-quarter corporate earnings reports. The TSE 300 composite index had declined 117.36 by noon to 4,512.39 in volume of 22.6m shares.

The market's biggest losers included Potash Corp of Saskatchewan, off C$1¼ at C$82¼, and BioChem Pharma, which dropped C$1⅜ to C$42¼.

Mexico sees rates rise

Mexico City tumbled in thin, mid-morning trade on expectations of a rise in interest rates and worries about speculation on the peso. The IPC index was 31.98 down at 2,360.37 in weak volume of 7.6m shares.

Traders noted that shares were also being sold by investors who were forced to build up stocks in portfolio restructuring at the end of the third quarter last Friday.

The heavily weighted Telmex L shares were down 1.6 per cent, while Aeromex A had declined 6.8 per cent.

SAO PAULO eased in light midday trade on profit-taking after the market's advance of more than 8 per cent last month. The Bovespa index was down 1.88 at 46,513 at 1 pm, in turnover of a thin R$107.2m ($112.5m).

LIMA was higher at midsession on light buying of blue chips by local investors as the market awaited the outcome of an overseas roadshow to promote the new Credicorp holding company.

The general index had risen 0.3 per cent to 1,362.86.

MARKETS IN PERSPECTIVE

	% change in local currency †				% change sterling †	% change in US $ †
	1 Week	4 Weeks	1 Year	Start of 1995	Start of 1995	Start of 1995
Austria	+0.21	-4.62	-10.08	-9.25	-2.28	-1.13
Belgium	-0.04	+0.81	+8.88	+6.66	+14.79	+16.14
Denmark	-0.29	-1.86	+2.59	+1.74	+10.81	+12.11
Finland	+1.26	+0.70	+30.33	+28.51	+41.31	+42.97
France	-0.04	-4.41	-2.80	-2.75	+4.46	+5.69
Germany	-1.52	-1.85	+4.64	+2.16	+9.99	+11.28
Ireland	+0.34	+2.19	+16.59	+15.43	+19.56	+20.96
Italy	-1.13	-3.36	-7.64	+0.59	+0.10	+1.28
Netherlands	+0.28	+0.94	+13.20	+9.80	+18.23	+19.61
Norway	+0.18	+1.61	+11.24	+2.77	+9.84	+11.12
Spain	-1.25	-2.06	+3.68	+7.10	+13.11	+14.44
Sweden	+1.18	+7.55	+33.49	+29.19	+37.04	+38.65
Switzerland	+0.83	+3.14	+17.67	+14.39	+28.77	+30.28
UK	-0.13	-0.21	+16.43	+14.01	+14.01	+15.34
EUROPE	-0.16	-0.42	+10.30	+9.00	+14.15	+15.48
Australia	-0.19	-0.19	+6.50	+11.27	+7.01	+8.26
Hong Kong	+0.62	+4.22	-5.90	+15.03	+13.78	+15.11
Japan	+1.95	+1.34	-7.67	-6.91	-6.94	-5.85
Malaysia	-2.16	-2.45	-13.65	+1.72	+2.27	+3.47
New Zealand	+0.84	-1.30	-0.72	+8.78	+10.59	+11.89
Singapore	+0.86	+0.98	-6.74	-2.96	-1.59	-0.44
Canada	+0.15	-0.69	+4.67	+7.27	+10.41	+11.70
USA	+0.55	+3.86	+26.67	+27.35	+25.88	+27.35
Mexico	-4.83	-4.11	-11.23	-0.33	-23.77	-22.88
South Africa	-0.51	+1.00	+15.04	-6.41	+3.24	+4.44
WORLD INDEX	+0.60	+1.74	+8.74	+9.80	+10.94	+12.24

† Based on September 29 1995.

EUROPE

Ugine up 26% as buy-in intrigues Paris bourse

The Usinor Sacilor buy-in of Ugine, its stainless steel subsidiary, preoccupied PARIS, said Mr John Fordyce at Ferri International. Ugine came back from suspension, rose FFr83 or 26 per cent to FFr400, and accounted for FFr1.91bn of the market's FFr4.6bn turnover as the CAC-40 index fell 7.64 to 1,780.71.

Foreign investors stayed out of the market, highlighted over the weekend as a serious underperformer this year. There was some action in recently weak stocks, Alcatel picking up FFr8.50 at FFr422.60 following a drop from FFr489.70 after last Wednesday's shock results, and Eurotunnel recovering 35 centimes to FFr7.45 ahead of half-year results on Friday. Axa, the insurer, with figures due on Thursday, rose FFr5.30 to FFr265.

However, there were still some sad stories: Credit Foncier de France, which said that provisions risked being higher than operating profits in 1995, dropped another FFr8.30 to FFr95.50; and although the market had expected French September car sales to be disappointing, the 19.2 per cent drop in Renault's figures left the shares FFr4 lower at FFr141. Accor, the hotel company, lost FFr17 to FFr593 as the industry mused on low occupancy rates for the summer of 1995.

FRANKFURT soured a little in the afternoon and the Ibis-indicated Dax index closed 4.26 lower at 2,197.01 ahead of today's holiday. Turnover dropped from DM5.7bn to only DM3.6bn.

On the day, Linde, the engineer, rose DM8.30 to DM876.30 after weakness last week, and after some weekend support for the stock; Schering fell DM1.85 to DM101.65, worried about the temporary withdrawal of its x-ray contrast drug Isovist, although dealers also said that fund managers were liquidating Schering positions to move into the Merck share offer.

Over the first nine months of 1995, noted Mr Eckhard Frahm at Merck Finck in Düsseldorf, the Dax 30 had risen 3.8 per cent, although it fell 2.3 per cent in September alone. He termed this a consolidation phase, and noted the strength of technology stocks and utilities: SAP preferred rose 165 per cent in the first three quarters, Viag by 13.9 per cent and RWE by 12.4 per cent.

Fourth quarter potential, said Mr Frahm, would depend on dollar recovery. The US currency's recent correction, he said, had been determined more by political tensions than by fundamentals.

MILAN, as so often, was held back by political wrangling, in spite of a run of encouraging corporate six-month reports. The Comit index eased 0.83 to 616.56 after the leaders of two key right wing parties threatened to withhold support for the 1996 budget proposals that Prime Minister Lamberto Dini takes to parliament today.

Gemina fell L36 to L746 in response to its first-half losses, news that it was under investigation, and as its directors talked to officials of the Consob bourse watchdog about the losses at its RCS publishing group. Ferruzzi was down L8 at L934 and Montedison was L13 lower at L1,104 as the Gemina losses raised questions about the merger plan.

Telecom Italia Mobile picked up L17 to L2,700 and Benetton L50 to L16,939 in response to their first-half results.

ZURICH closed higher with the help of bullish bond markets, although volume was modest. The SMI index rose 24.2 to 3,039.0.

Winterthur Insurance's optimistic forecast for its 1995 results fuelled enthusiasm in the whole sector. Winterthur rose SFr23 to SFr785, Zurich by SFr8 to SFr332, and Swiss Re SFr10 to SFr1,138 on its plans to buy 15 per cent of Deutsche Postbank, which dealers said would give the Swiss group a broad selling network.

Elsewhere, foreign buying helped to boost Nestlé, ahead SFr13 at SFr1,196, and Ciba, SFr13 higher at SFr936.

Schindler was unchanged at SFr6,200; the company announced a simplified share structure after the market closed.

AMSTERDAM remained in the doldrums, with trading characterised by low volume and with light losses seen across the market. The AEX index finished 1.14 lower at 465.12.

Philips lost 80 cents to Fl 77.20 after coming under early pressure linked to Friday's fall in technology stocks on Wall Street.

Nutricia traded as high as Fl 120.50 in response to further analysts' upgrades before turning back to finish 30 cents weaker on the day at Fl 120.50.

Heidemij, the engineering consultancy which made its debut on the bourse, ended at Fl 15.20, compared with a Fl 15 issue price.

NORDIC markets featured a cross border link in which Sweden's Euroc and Norway's Aker AS said that they were merging their cement and building materials units in a deal worth SKr4bn.

Aker also said that it had bought a 25 per cent stake in Euroc from the Finnish Partek for NKr2.1bn. The deal would create a company with an annual turnover of SKr17bn and 11,000 employees, Euroc said.

STOCKHOLM's Affärsvärlden index eased 7.8 to 1,834.5 in otherwise quiet conditions, and as Euroc jumped SKr7 to SKr165.

In OSLO, the total index was 0.58 higher at 737.35 as Aker's A shares finished NKr2 ahead at NKr97, after a day's high of NKr100.

HELSINKI's Hex index advanced 15.31 to 2,191.83 as the market braced itself for more eight-month results after the recent mixed bunch, with Partek picking up FM1.50 to FM64.50.

Hopes of a return to political stability helped both ISTANBUL and LISBON, the former gaining 3 per cent on hopes for the formation of a new government and the latter taking its recovery to a fifth consecutive session following the socialist victory in Sunday's elections.

Istanbul's composite index, weakened since September 20 by the coalition government's collapse, rose 1,262.08 to 42,969.80; Lisbon's BTA index put on another 15.2 to 2,621.4, having hit a 1995 low of 2,580.7 a week earlier.

Written and edited by William Cochrane and Michael Morgan

FT-SE Actuaries Share Indices — THE EUROPEAN SERIES

Oct 2 Hourly changes	Open	11.30	12.00	12.30	13.00	14.00	15.00	Close
FT-SE Eurotrack 100	1420.89	1421.35	1421.51	1422.33	1423.23	1424.42	1422.95	1423.06
FT-SE Eurotrack 200	1518.33	1519.35	1519.52	1520.79	1521.72	1522.03	1522.39	1524.47

	Sep 29	Sep 28	Sep 27	Sep 26	Sep 25
FT-SE Eurotrack 100	1412.87	1405.44	1413.48	1436.80	1420.32
FT-SE Eurotrack 200	1513.66	1502.32	1503.56	1528.62	1516.31

Base 1000 (26/10/90); High/day: 100 - 1425.38; 200 - 1524.83 Low/day: 100 - 1420.85 200 - 1518.15 † Partial

ASIA PACIFIC

Nikkei under pressure as Kuala Lumpur falls 1.7%

Tokyo

A decline in the yen supported share prices in lacklustre early trading but unwinding of arbitrage positions pulled the Nikkei average down near the close, *writes Robert Patton in Tokyo*.

The 225 index ended 173.22 off at 17,739.84, adding to Friday's loss of 109.80. It slogged through a day of featureless trading with a high of 17,950.18 and a low of 17,683.84.

Many traders who had closed out positions at the end of the first half-year's business on Friday found little reason to jump back in. Institutional and foreign investors were also conspicuously absent and volume was estimated at just under 200m shares, down from Friday's 250m.

Only renewed dollar strength, boosted by reports that next Saturday's G7 meeting in Washington is likely to support a dollar rise to as high as Y110, shored up the market during the morning and early afternoon. The strength of stocks in New York, where the Dow had touched a record peak on Friday, had no observable impact in Tokyo. The market had already started to weaken when waves of futures-led arbitrage selling pushed prices lower towards the close of trading.

The Topix index of all first section stocks, after adding 2.39 on Friday, fell 16.09 or 1.1 per cent to 1,422.07. Losers trounced gainers by 692 to 298, with 169 stocks unchanged, and the capital-weighted Nikkei 300 slipped 3.2 to 266.45. In London the ISE/Nikkei 50 index put on 2.99 at 1,214.55.

Real estate shares were the biggest losers, the sector dropping 2.8 per cent. Mitsui Fudosan shed Y30 to Y1,160, Sumitomo Realty and Development Y25 to Y670 and Mitsubishi Estate Y30 to Y1,180.

High-technology and heavy electrical issues also weakened. Fujitsu receded Y20 to Y1,230, Hitachi Y20 to Y1,060 and NEC Y20 to Y1,360.

NTT, the subject of recent arguments over whether the former state telecommunications monopoly should be broken up, dipped Y5,000 to Y848,000. Other privatised stocks also fared poorly. East Japan Railway declined Y5,000 to Y485,000.

Notable among the day's few winners were paper and pulp manufacturers. Nippon Paper Industries advanced Y14 to Y664 and Mitsubishi Paper Mills Y14 to Y591.

Pharmaceuticals also rose, with Takeda Chemical Industries up Y20 at Y1,400.

In Osaka the OSE average eased 161.23 to 19,271.32 in volume of 21.9m shares.

Roundup

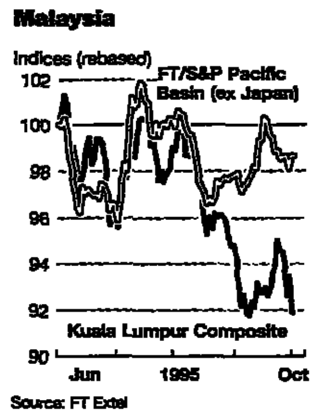
Much of the region encountered selling pressure, and Bombay, Shanghai and Shenzhen were closed for holidays.

KUALA LUMPUR's stockbrokers were among major losers as recent poor market performance indicated that their earnings would be lower. The composite index ended 16.48 or 1.7 per cent down at 984.12 on further selling amid continuing worries about the overheating economy.

Among the stockbrokers, Rashid Hussain fell 60 cents to M$6.60 and TA Enterprise lost 24 cents at M$3.30.

Promet fell heavily after confirmation of a shareholding change, dropping 16 cents to M$2.94. The stock climbed sharply in recent weeks on takeover speculation.

Malaysia



Source: FT Extel

SINGAPORE was weak, with Malaysian shares on the OTC market still under pressure and Singapore shares seeing more profit-taking. But a late pick-up in index stocks led the Straits Times Industrial index to close 0.16 firmer at 2,120.19, while the UOB OTC index fell 9.92 to 1,093.16.

SEOUL saw a broadly based consolidation which, combined with worries about slipping customer deposits, pushed the market lower in thin trading. The composite index lost 6.86 at 975.79, with financials and construction shares hit hard by margin account selling.

Brokers said a planned public offering of 6.9m shares by Kookmin Bank at Won11,400 also depressed the market. The bank will sell the shares, which were not taken up in a rights issue last month, on October 4 and 5, with payment due on October 13. Kookmin Bank fell Won200 to Won14,600.

Korea Mobile Telecom picked up Won15,000 to Won500,000 on some bargain hunting and speculative buying, which generated buying interest in other telecom shares.

HONG KONG finished higher on strong demand for Hong Kong Telecom as well as more broadly based buying interest from Japanese funds.

The Hang Seng index ended 78.64 up at 9,724.98, off the day's high of almost 9,764, in turnover of HK$3.3bn, compared with Friday's HK$3bn.

Hong Kong Telecom rose 20 cents to HK$14.25 on purchasing from the UK and US.

New World moved ahead 10 cents to HK$30.60 after reports that the group was bidding for a $150m contract to redevelop Ho Chi Minh City airport.

WELLINGTON featured a reduced profits forecast from the textile manufacturer Ceramco, down 30 cents at NZ$1.95 after touching NZ$1.75. The NZSE 40 index shed 5.23 to 2,107.43 in NZ$25.5m turnover.

KARACHI ended down on position-squaring on settlement day, the KSE 100 index losing 6.39 at 1,649.25. Dewan Salman Fibres, off sharply last week on rumours that staple fibre prices would be lowered, recovered 2 per cent at one stage on reports that the rumours were inaccurate, but ended Rs0.50 lower at Rs87.75.

JAKARTA noted late profit-taking in actively traded small issues, and the composite index fell 2.68 to 490.56. Intraco Penta, a small issue and consistently among the most heavily traded stocks, was up a net Rp175 at Rp1,600 after late profit-taking, having registered an intraday high of Rp2,000.

Subdued S Africa weaker

Johannesburg was lower in subdued activity, with falls led by blue chip industrial and gold mining issues. The overall index shed 5.4 to 5,651.9 and industrials 15.0 to 7,098.2. Golds, knocked by a weak bullion price, lost 9.9 at 1,503.8.

Overall sentiment, however, was propped up by good demand for Anglo American and De Beers. Anglos gained R1 at R203.25, while De Beers continued its seesaw performance of the past two weeks and put on R1 at R99.75.

FT/S&P ACTUARIES WORLD INDICES

The FT/S&P Actuaries World Indices are owned by The Financial Times Ltd., Goldman, Sachs & Co. and Standard & Poor's. The indices are compiled by The Financial Times and Goldman Sachs in conjunction with the Institute of Actuaries and the Faculty of Actuaries. NatWest Securities Ltd. was a co-founder of the indices.

NATIONAL AND REGIONAL MARKETS Figures in parentheses show number of lines of stock	FRIDAY SEPTEMBER 29 1995 US Dollar Index	Day's Change %	Pound Sterling Index	Yen Index	DM Index	Local Currency Index	Local % chg on day	Gross Div. Yield	THURSDAY SEPTEMBER 28 1995 US Dollar Index	Pound Sterling Index	Yen Index	DM Index	Local Currency Index	DOLLAR INDEX 52 week High	52 week Low	Year ago (approx)
Australia (82)	185.82	1.0	174.06	115.88	137.48	163.75	0.7	3.97	184.04	172.47	115.79	135.98	162.56	191.01	157.95	171.16
Austria (26)	180.67	0.3	169.23	112.66	133.66	133.57	0.5	1.34	180.08	168.74	113.28	133.04	132.95	199.28	167.48	184.83
Belgium (35)	195.61	0.3	183.23	121.98	144.71	141.01	0.4	3.71	194.98	182.73	122.67	144.06	140.45	201.12	161.86	165.22
Brazil (28)	152.53	1.9	142.87	95.11	112.84	267.59	1.7	1.58	149.75	140.34	94.21	110.64	263.05	-	-	-
Canada (101)	144.53	0.3	135.38	90.13	106.93	140.98	0.0	2.63	144.04	134.99	90.62	106.43	140.93	150.83	121.81	138.52
Denmark (33)	282.30	0.7	264.43	176.04	208.84	212.04	0.7	1.53	280.25	262.63	176.32	207.07	210.60	295.99	238.61	250.42
Finland (25)	265.87	3.0	249.03	165.79	196.69	237.71	2.8	1.35	258.16	241.93	162.42	190.74	231.21	276.11	171.13	178.37
France (100)	172.85	1.0	161.91	107.79	127.88	133.14	1.0	3.29	171.20	160.44	107.71	126.49	131.85	191.17	157.79	165.51
Germany (59)	159.47	0.5	149.38	99.44	117.97	117.97	0.6	2.02	158.65	148.68	99.82	117.22	117.22	167.74	134.99	140.26
Hong Kong (56)	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Ireland (16)	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Italy (56)	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Japan (483)	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Malaysia (107)	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Mexico (18)	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Netherland (19)	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
New Zealand (14)	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Norway (33)	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Singapore (44)	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
South Africa (45)	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Spain (38)	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Sweden (48)	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Switzerland (45)	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Thailand (46)	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
United Kingdom (200)	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
USA (504)	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Americas (651)	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Europe (734)	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Nordic (139)	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Pacific Basin (831)	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Euro-Pacific (1565)	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
North America (605)	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Europe Ex. UK (534)	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Pacific Ex. Japan (348)	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
World Ex. US (1757)	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
World Ex. UK (2061)	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
World Ex. Japan (1778)	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
The World Index (2281)	194.25	0.5	181.85	121.13	143.70	181.11	0.3	2.27	193.27	181.12	121.59	142.80	180.70	194.25	165.92	178.18

CONSTITUENT CHANGE WITH EFFECT 3/10/95: Deletion: Home Oil Co (Canada). CONSTITUENT CHANGE 29/9/95: Conversion: Almanij AFV into Almanij VVPR (Belgium). Latest prices were unavailable for this edition.

Talks end 30-year standoff, but reinforce deadlock over IRA weapons

Hope for Ireland talks fades

By John Murray Brown in Dublin

The prospect of all party talks taking place in Northern Ireland before the visit of President Bill Clinton in November appeared to be dashed yesterday by Mr David Trimble, leader of the pro-British Ulster Unionists, the province's biggest party.

Mr Trimble indicated that moving to all-party negotiations on Northern Ireland's future before the end of the year was not possible without progress on the decommissioning of paramilitary arms. He was speaking at a historic meeting in Dublin with Mr John Bruton, prime minister of the Republic of Ireland.

The US administration is to send a business development mission this month to Northern Ireland and neighbouring counties in the Republic of Ireland, the US consulate in Belfast said yesterday. Fourteen companies led by Mr Charles Meissner, US assistant secretary of commerce for international economic policy are to take part. Mr Joe White, the US commercial representative in Belfast, said the mission was "part of a long-term process of . . . and building on the increasing interest of US firms in business opportunities in Northern Ireland".

It was the first time a unionist leader has met an Irish prime minister in almost 30 years. The meeting followed Mr Bruton's talks with Mr John Major, the British prime minister, and with Mr Gerry Adams, president of Sinn Féin, the political wing of the Irish Republican Army.

Mr Bruton said last week that a breakthrough in the peace process was "tantalisingly close". Mr Clinton has indicated that he would like to see all-party talks under way by the time he visited Belfast, Dublin and London at the end of November.

While Mr Bruton played up the positive aspects of yesterday's talks with the Ulster Unionists, it was left to Mr Bertie Ahern, the republic's opposition leader, to suggest the difficulties that could prevent all-party talks before the Clinton visit. "That's too early on his agenda, and that is disappointing," Mr Ahern said after meeting Mr Trimble.

Officials in the government of the republic said Mr Trimble had given no hint of a change in his hardline position on the need for the "decommissioning" of IRA weapons. "What is inescapable is that people establish a commitment to exclusively peaceful means and its difficult to see how that can be done without addressing the weapons issue," Mr Trimble said.

John Bruton, prime minister of the Irish Republic (second from left), greets Ulster Unionist leader David Trimble. They are flanked by Ulster Unionist MPs Ken Maginnis and John Taylor

He appeared, however, to leave open the possibility that his party might accept something less than a physical decommissioning of arms before Sinn Féin could come in from the cold. Officials in the republic are heartened by the fact that for the first time the Ulster Unionist party seems to have acknowledged that Northern Ireland's 25-year conflict cannot be solved by a recreation of the Stormont parliament, which was replaced by direct rule from Westminster in 1972.

Mr Bruton has now met all the Northern Ireland parties except the hardline Democratic Unionists, who yesterday condemned Mr Trimble's meeting in Dublin.

Arizona regulator demands answers

By Ralph Atkins, Insurance Correspondent

Lloyd's of London faced a fresh headache in the US last night when regulators in Arizona said they were calling on the insurance market to answer charges of securities fraud. Lloyd's said it would resist firmly the accusations that it had misled Names – individuals whose assets have traditionally supported the insurance market – when they joined the insurance market.

The case is unusual in involving an official regulator – the Arizona Corporation Commission. The commission's securities division said investing in Lloyd's had been deemed akin to investing in securities and therefore fell under its jurisdiction.

If it is not satisfied with Lloyd's answers, the commission could foil the insurance market's efforts to collect debts locally from lossmaking Names as well force Lloyd's to pay financial penalties.

LLOYD'S
LLOYD'S OF LONDON

The commission said the charges followed complaints about Lloyd's and allegations that it knew about the flood of asbestosis claims. Mr Dee Harris, director of securities, said: "Even though they were assured to the contrary, Names were placed in syndicates underwriting asbestosis claims."

He added: "The unfortunate truth is that Lloyd's has the capacity to continue drawing on investors' letters of credit and to make cash demands until the very last penny of their net worths is gone. We want to stop the pointless haemorrhaging of Arizona investors." Lloyd's has been given 10 days to respond.

● Pressure on Lloyd's of London to increase its £2.8bn offer to lossmaking and litigating Names intensified yesterday when the moderate Association of Lloyd's Members warned that the current figure might be insufficient.

Labour party Reform proposed for eastern Europe ■ Lower football admission prices sought ■ VAT cut urged for fuel

Kinnock calls for social reform

By Robert Shrimsley in Brighton

Mr Neil Kinnock, European Union transport commissioner, yesterday called for widespread and ambitious social reform to be considered by the 1996 inter-governmental conference. His comments, at a European Commission fringe meeting at the Labour conference, contrast with the government's wish to restrict the 1996 conference - the so-called Maastricht II - to a narrow agenda.

Mr John Major, the British prime minister, wants the IGC to concentrate on deregulation and repatriation of powers from Brussels and not on social initiatives. Mr Kinnock, however, said the conference should develop policies on employment, environment and migration.

Mr Kinnock, a former leader of the Labour party, also called for a new approach to integrating the east European nations of the former communist bloc. He said that rather than wasting their time by inviting them to six-monthly lunches at the end of summits they should be invited to form new communities on specific areas. He compared the idea to the European Coal and Steel Community, the forerunner of the EU, and forecast East European communities on transport, energy and research which would work together and with the EU as a positive step towards membership.

Mr Kinnock said the IGC must be more than simply a "5,000-mile service" if it was not to disappoint the people of Europe.

He said thoughts behind the Maastricht Treaty and the planned 1996 conference were ideas from an old era, before the European recession and the collapse of the Soviet bloc. "Insufficient attention was given to the changed economic realities," he said.

"I would therefore like the European Council to say that the Maastricht treaty was a child of its time. We have to be more ambitious and broader in our thoughts."

He said the economic realities were "too strong" for a narrow agenda devoted to administrative issues such as voting procedures. Social initiatives were needed.

Leader aims to end 'policy vacuum' jibes

By Robert Peston, in Brighton

Mr Tony Blair, leader of the opposition Labour party, will today unveil ambitious plans to "transform the country" based in large part on a national programme of investment in information technology. His keynote speech to the party's annual conference will attempt to answer criticisms that the party lacks a coherent and detailed policy programme, following a year in which the emphasis has been on modernising the party's structure.

Underpinning many of his proposals will be a programme to harness new technologies, based on the construction of an information superhighway connected to all schools and hospitals and to which all homes could have access.

A first step to fill the gaps in Labour's programme was made yesterday by the the shadow chancellor of the exchequer, Mr Gordon Brown, who said value added tax on fuel should be cut from 8 per cent to 5 per cent, at an annual cost to the exchequer of just under £500m ($775m).

Mr Brown pressed the government to make the reduction in November's Budget. He said that if the government failed to act, the reduction would be made in the first year of a Labour government, so long as the economic conditions were appropriate.

"The tax priority is to cut the tax on keeping warm for 10 million pensioners and millions of low income families", he told delegates at the party conference. His plans were immediately attacked by ministers in the Conservative government. Mr Michael Jack, financial secretary to the Treasury, said Mr Brown had made 10 pledges with public spending implications in his speech, including a commitment to sign the European Union social chapter and introduce a national minimum wage.

"Labour will always spend more than the Conservatives, therefore they will always have to tax more than the Conservatives," he said.

Labour kept up its attack on the former state-owned utility companies yesterday, when Mr Jack Cunningham, its trade and industry spokesman, criticised the current wave of bids for regional electricity companies.

He said a Labour government would make retrospective references of many of the takeovers to a new competition authority it plans to create. As industry minister, he would not hesitate to force some of those companies taken over to be demerged.

Camelot to oppose threat to curb profits

THE NATIONAL LOTTERY

Camelot, the operator of the National Lottery, would try to oppose any attempt by a Labour government to hand over the running of the lottery to a non-profit making organisation at the end of the seven-year contract, George Parker and Raymond Snoddy write. The company says the proportion of money it raises for charity is among the highest of lotteries throughout the world – and the cost of raising it among the lowest.

Football admission prices could be cut by a Labour government, in response to fears that the average family is being priced out of the national game. Labour is trying to bury its interventionist past in other areas, but Mr Chris Smith, the shadow heritage secretary, said the party would actively work to bring down turnstile prices. In a warning which provoked disbelief in football boardrooms around the country, Mr Smith said Labour might "very reluctantly" force clubs to cut prices if they did not do so voluntarily.

Camelot, which announced pre-tax profits of £10.8m in the year to the end of March following the National Lottery launch last November, wants to be able to apply for a new licence when the present one runs out in 2001. Mr Chris Smith, shadow national heritage secretary, said yesterday: "The principle is that the lottery should be run on a 'not-for-profit' basis, not as a mechanism for making very substantial profits."

Labour's pledge might open the door for another bid by Mr Richard Branson's UK Lottery Foundation, which promised to give all the proceeds to good causes – some of them of Mr Branson's choosing.

The Branson consortium was highly critical of the government's decision to award the contract to Camelot. Mr Smith said he had had discussions with Mr Branson, "but not specifically on that point". Mr Branson also held talks on the subject last month with the Labour leader, Mr Tony Blair.

Labour is drawing up detailed policies on the lottery, and is considering whether there should be a limit on top prizes, and whether there should be changes in how money is distributed to good causes. Mr Smith said an underlying principle should be that Britain's lottery should not be run on a commercial, profit-making basis.

Editorial Comment, Page 15

Cut-price apples alleged to have been diverted from countries opposing Mururoa tests

Growers accuse France of 'dumping'

By James Harding in London

Cheap French apples are being "dumped" on the UK market to compensate for falling sales in Germany and Scandinavia, say English growers. Those are regions where boycotts have followed France's nuclear tests in the Pacific.

English Apples and Pears, the industry association, aims to alert the public to the threat to the English Cox from French Golden Delicious retailing below traditional market prices. The warning will appear in an open letter in British newspapers today. French Golden Delicious are on offer in some British supermarkets for as little as 24 pence a pound (83c a kg), nearly half the normal selling price. Cox apples grown in Britain are on sale at 59 pence a pound. "Growers are fearful that shoppers who are normally loyal to English fruit will be lured into buying cheap imports," said English Apples and Pears.

"Thousands of tonnes of underpriced French apples are flooding into the UK as other European markets dry up in the aftermath of French nuclear testing," said Mr David Browning, chairman of English Apples and Pears. "This dumping policy is undermining the stability of the market and the long-term viability of English apple growing."

English growers believe that German and Scandinavian boycotts of French produce have forced French growers to sell to the UK, where the market is reported to have been unaffected by public opposition to the nuclear tests. J. Sainsbury, the British food retail chain, confirmed that "The Mururoa tests have had no effect on our sales in the UK, but we understand that that has not been the case in either Germany or Scandinavia."

Tesco, which has lowered Golden Delicious prices in recent weeks, said: "The French have had problems selling elsewhere in Europe and therefore there are more apples available than usual, and available cheaper."

Mr Malcolm Schofield, managing director of Enfru, the apple marketing company, calculates that French apples are being sold at less than the cost of production.

French Golden Delicious cost 59 pence a pound at Sainsbury's, 39 pence at Tesco and have been advertised at 29 pence at Safeway and 24 pence at Somerfield.

The fall in prices for Golden Delicious coincides with the first few weeks of the new season for the English Cox, which ripens to its best eating quality at the beginning of October.

Index sinks to three-year low

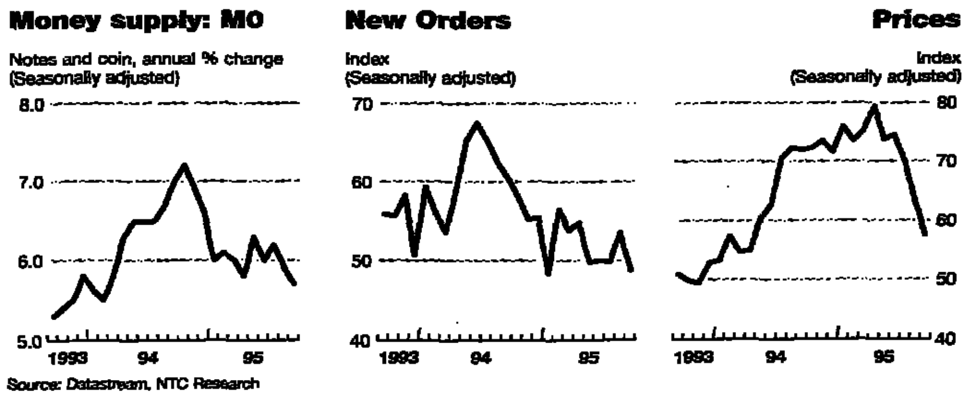
By Gillian Tett, Economics Correspondent

The purchasing managers' index, which surveys business activity, fell last month to its lowest level for three years. The data fuelled suspicions that manufacturing output has eased in recent months.

The survey of some 300 managers suggested that a lower level of demand and orders is prompting many companies to sell off stock. Nevertheless, with the survey suggesting that output is still rising, most economists continue to believe that the data simply point to a brief "destocking" pause in growth, rather than a more serious business slowdown.

Although the survey suggested that some price pressures in industry are easing, this did not entirely allay City of London fears that inflationary pressures could reappear next year if demand recovers.

Measured overall, the purchasing managers' index, which consists of data on stocks, output, demand, delivery times and employment, fell to a seasonally adjusted 50.5 per cent in September. Since any figure above 50 per cent indicates month-on-month growth, the data suggested that manufacturing activity had expanded slightly between August and September. However, the rate of expansion was the slowest seen for three years, and a breakdown of the data suggested that this easing in growth had been associated with company destocking.



Source: Datastream, NTC Research

The level of purchases by companies from other companies eased. The level of new orders reported by companies fell back between August and September. Overall output was reported to have risen slightly between August and September.

However, the time taken for suppliers to meet orders, for example, fell back last month, suggesting that there were now fewer bottlenecks in manufacturing. Meanwhile, weaker demand also appeared to be triggering reduced price pressure. The price index fell back to its lowest level for 18 months. With these reduced price expectations matched by other surveys from the Confederation of British Industry – and echoed in recent official factory price data – some economists yesterday concluded that inflationary pressures were easing.

Mr David Hillier, UK economist with NatWest Markets said: "Manufacturers are using sensible pricing policy to shift unsold stock."

Others were more pessimistic. Ms Helen MacFarlane of brokers Hoare Govett said: "There remain significant pent up price pressures further along the production chain."

Rules for pricing medicines may change

By Daniel Green in London

Rules for pricing medicines may change next year to encourage pharmaceuticals companies to launch better new drugs, Mr Stephen Dorrell, health secretary, said yesterday. "Pricing structures should be used imaginatively to encourage the emergence of genuinely new developments," Mr Dorrell said at a conference in London sponsored by the state health service.

A change to favour one kind of drug over another would be a radical departure from the current system, called the pharmaceutical pricing regulatory scheme (PPRS), which has been in place since the 1950s. Under the PPRS drug pricing is regulated only indirectly by the government. Drug companies can price their products so as to make a maximum return on capital invested of between 17 and 21 per cent.

Most other European countries have drug prices set through negotiations with the government. In the US, which accounts for 40 per cent of world drugs sales, pricing is unregulated. Mr Dorrell said the British government was "committed to a review of the PPRS over the next 12 months."

The PPRS was last reviewed in 1993, when an across-the-board 2½ per cent price cut was agreed with the pharmaceuticals industry. If drugs pricing were reformed to offer higher rewards to breakthrough drugs, the UK would probably be the first country in the world to adopt such a system.

The nearest equivalent is in Japan, where drugs have a high initial price followed by a series of compulsory price cuts as the drug gets older.

The Japanese system has been criticised for encouraging drugs companies to launch new products at inflated prices in the knowledge that the price would soon be forced lower.

Mr Dorrell said the pharmaceuticals industry and other healthcare businesses had a common interest with the Department of Health in ensuring that new products were aimed at treating people who were not yet well treated.

UK NEWS DIGEST

Ex-carmaker makes tourist submarines

A former British motor manufacturer plans to exploit a growing niche in the tourist industry – submarines. Marlin, which once produced two-seater sports cars, has developed a diesel-electric submarine designed to bring underwater transport to more resorts around the world. Battery-powered submarines already serve several holiday spots, mainly in the Caribbean and US, but Marlin claims to have designed the first submarine aimed at the tourist trade capable of operating from quayside locations rather than offshore platforms, and able to reach depths of 300 metres.

"Traditional tourist submarines are ponderous and costly to operate," said Mr Paul Moorhouse, Marlin's senior designer. "But our model promises all the capabilities of military boats." The company, funded partly by Midland Bank, said its vessels would cost about £1.1m ($1.7m) against the £3m average cost for existing vessels. Until now, Marlin has concentrated on specialist midget submersibles, one of which is in service with the Swedish navy and another with Sea Shepherds, the Californian whale conservation group.

Tim Burt, Companies Staff

Talking store shelves beckon cat owners

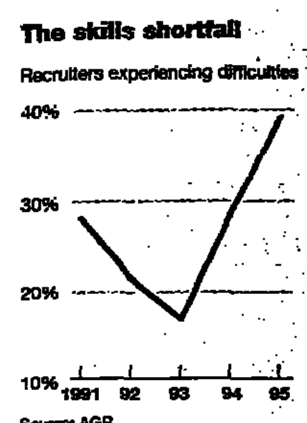
Spillers, the petfood maker, has taken to whispering sweet nothings in shoppers' ears. "Indulge your loved one with a can of new Spillers Purrfect; but remember it's just for cats," says a disembodied voice to anybody coming near cans of its cat food in some Somerfield supermarkets. Using the first "talking shelves" in British supermarkets is one half of a two-pronged attack by Spillers, a division of Dalgety, for its "biggest new product launch in 10 years," says Mr Richard Hodgson, Purrfect's senior brand manager.

A man eating cat food is the other prong, launched in television advertisements last night. "We have deliberately used humour to show that we in no way condone human consumption of cat food," Mr Hodgson added. The actor ate no Purrfect for the ads, he admitted. The idea of the ads is to show that cats, like humans, are moving to lighter, more varied meals. Purrfect recipes include salmon in a prawn jelly and rabbit in a game sauce.

The talking device, a battery powered chip coupled to a speaker but disguised behind a picture of a Purrfect can, was developed by Instore Marketing Technologies, a subsidiary of PVP of Belgium. Already tried on some 15 products in mainland Europe ranging from fruit-flavoured yoghurt drinks to toilet paper, the devices generated on average a three-fold increase in sales, said Mr Jon Cooper of Instore's UK operation. The Purrfect message is triggered when a shopper comes within 4m of it. Rented from Instore at £170 ($265) per device per store for 10 days, the equipment is more effective in terms of cost and psychology than "personality girls", Mr Cooper says.

Roderick Oram, Consumer Industries Editor

Skills of graduates inadequate for recruiters



Source: AGR

Graduate recruiters ought to be spoilt for choice. Thanks to the expansion in higher education, they have a far wider choice of potential recruits. But figures published by the Association of Graduate Recruiters, which represents the 270 biggest recruiters, show that their problems have increased over the past five years. Almost 40 per cent say they had difficulties recruiting graduates with sufficient transferable skills this year. Today, the association will publish a report which recommends how universities should change to provide graduates with the skills they need. However, the Institute of Employment Studies suggests the problem is less serious than it appears. In its annual report, the institute suggests that during the recession recruiters targeted their recruitment more at specific institutions. This meant they became more selective, and ensured they took the "best" graduates.

John Authers, Public Policy Staff

Travel trade bewails 'very tough year'

The president of the Association of British Travel Agents said yesterday he despaired at the "suicidal" tactics employed by the travel industry "where the only result is a victory for the consumer". Mr Colin Trigger said the UK travel market was characterised by "price discounting, invisible margins, insecurity of employment and tight company finances." Consumers were being confused by the many special offers and were being spoilt for years to come, he said at Abta's annual conference at the South African resort of Sun City.

The travails of the sector were underlined yesterday when First Choice, the UK's third largest tour operator, warned that its profits would fall to just £1m this year after a "dreadful" August. Its shares fell sharply as it launched a £44.1m rights issue, which will be used to finance three acquisitions and to bolster the balance sheet. In Sun City, Mr Warren Sandral, chairman of Abta's Tour Operators Council, said it had been a "very tough year" for the travel industry and could get tougher. It had expected growth of 10 per cent but the market ended up flat.

Scheherazade Daneshkhu, Sun City

هكذا من الأصل

BUSINESSES FOR SALE

Latham Crossley & Davis

M J C Oldham F.C.A. & P S Dunn F.C.A.
Joint Administrative Receivers

re: Marina Holdings Ltd and Hoo Marina (Medway) Ltd

Freehold Marina
HOO, KENT

- Well situated on River Medway with good access to esturial and coastal sailing
- Approx. 190 serviced pontoon moorings including about 120 fully floating berths
- Extensive lay up and haul out facilities, workshops etc.
- Long leases held on foreshore
- £39,700 p.a. approx. produced from lettings of chandlery, garages, clubhouse, workshops etc
- Annual turnover £386,500 approx.

FOR SALE
Contact Ref: CJW

ES&P
EDWARD SYMMONS
HOTEL & LEISURE
2 Southwark Street, London Bridge, London SE1 1RQ
Fax: 0171-403 1947
LONDON · MANCHESTER · LIVERPOOL · BRISTOL · SOUTHAMPTON · LEEDS
Tel: 0171-407 8454

BROOKFIELD FARMS LIMITED

(In Administrative Receivership)

The Joint Administrative Receivers, N. J. Dargan and P. H. Bendall, offer for sale as a going concern, the business and assets of the above company.

- Wholesaler and Retailer of frozen foods/dry goods.
- 27,000 sq. ft. freehold premises including cold store facilities on a four acre site one mile from the M6 near Lancaster.
- 14 retail shops including two freehold properties.
- Turnover for nine months to 31 July 1995 approximately £3.5 million.

For further information please contact N. J. Dargan or T. J. Hargreaves at Touche Ross & Co., PO Box 500, Abbey House, 74 Mosley Street, Manchester M60 2AT. Tel: 0161 228 3456. Fax: 0161 236 0720.

Touche Ross
Deloitte Touche Tohmatsu International

Authorised by the Institute of Chartered Accountants in England and Wales to carry on investment business.

KPMG

Goldline Upholstery Ltd.
(in provisional liquidation)

Brierley Hill, West Midlands

The provisional liquidators offer for sale the business and assets of Goldline Upholstery Limited.

Principal features include:

- Manufacturers of quality upholstered furniture;
- Skilled workforce;
- Well designed, attractive product range;
- Current order book;
- Well located leasehold premises;
- Good customerbase;
- Annual turnover of approximately £7 million
- Modern plant and equipment.

For further information contact John Wheatley, Provisional Liquidator, KPMG, 2 Cornwall Street, Birmingham B3 2DL. Tel: 0121 232 3000, Fax: 0121 232 3500.

KPMG Corporate Recovery

BUSINESSES WANTED

PKF

Time to sell?

Do you own a profitable company but feel that the time has come to sell?

PKF Corporate Finance can realise your potential

For a confidential discussion contact Stan Patey or Julian Gibbins at PKF Corporate Finance
New Garden House
78 Hatton Garden
London EC1N 8JA
Tel: 0171 831 9373
Fax: 0171 405 1475

PANNELL KERR FORSTER

Acquisitions sought in PROPERTY MANAGEMENT

Our clients seek acquisitions of *businesses providing property* management and related advice & services of all types.

This could be a unique opportunity to *realise part/all* of your investment, or to merge with an international organisation with a clear vision of the future.

We will provide confidentiality agreements for exploratory talks and are keen to promote early discrete and senior dialogue.

Please call
ref. MK/PROP. on
01279-503553 Fax. 01279-466156
or
ref. BR/PROP. on
01568-720493 Fax. 01568-720196

FOR SALE

Scottish shellfish trading company based in North of Scotland. Large storage facilities on Islands Orkney and Skye. Live trucking of product to France, Italy and Spain. Turnover around £2M.

Please contact Chairman, C.R.S. & Associates, 4 Stafford Street, Edinburgh.
Fax +44 0131 225 1738

OFFER FOR SALE OF AUSTRALIAN MINING AND MINERAL ASSETS
BY

PANCON

PANCONTINENTAL MINING LIMITED
A.C.N. 009 712 092

- 100% of the Thalanga base metal mine and exploration tenements, North Queensland
- 100% of the Lady Loretta and Lady Annie base metal projects, NW Queensland
- 5.56% of the Central Queensland Coal Associates (CQCA) & Gregory Joint Ventures
- 40% of the Queensland Magnesia (QMAG) Joint Venture operations
- 50% of the Wodgina Tantalum Joint Venture operations and exploration tenements, WA

Interested parties should register their interest by 16 October 1995 with:

Ord Minnett Corporate Finance Limited
GPO Box 3804
Sydney NSW 2000, Australia

Neil Johnson: Telephone: (612) 220 1504
Ivor Orchard: Telephone: (612) 220 3173
Facsimile: (612) 220 1314

or

Ord Minnett Limited
25 Copthall Avenue
London, EC2R 7BP

Larry Kaplan
Telephone: (44 171) 382 8986
Facsimile: (44 171) 382 8950

LAVENHAM RUGS

The Joint Administrative Receivers, Ray Hocking and Peter Byatt, offer for sale the business and assets of

The Lavenham Rug Company Limited and Shasco International Limited

- *Lavenham established since 1969*
- Located in freehold premises at Long Melford near Sudbury, Suffolk with space for expansion
- Manufacturers of equine and equestrian products with a reputation for quality
- Shasco has own leasehold premises in Walsall for production of range of leather goods
- Joint turnover for last financial year *in excess of £1m*
- High percentage of export sales with scope for further development
- Good order book and fully committed staff of 40

For further information please contact
Ray Hocking or Peter Byatt,
BDO Stoy Hayward,
8 Baker Street,
London W1M 1DA
Tel: 0171-486 5888
Fax. 0171-935 3944

Ref 7/PMS

BDO
BDO Stoy Hayward
Corporate Recovery and Insolvency

COMPUTER CONSUMABLES
(and/or Ancillary Products)
BUSINESS REQUIRED

Selling by Mail Order or Telesales

Computer Consumables and/or Ancillary Products
Location - Anywhere in UK. Profitable or Loss-making
T/O Minimum of £500,000 p.a.
Please Reply in confidence to:
HARRIS ASSOCIATES
52-53 Margaret Street, London W1N 7FF
Contact: Mr R Harris - (tel) 0171 580 5700 or (fax) 0171 580 5900

MACHINE TOOL/ENGINEERING COMPANIES REQUIRED

We are a Group of Engineering Companies looking to extend ouractivities by the acquisition of Machine Tool/Engineering Companies, either manufacturing or distribution.

Should you have a Company or a Division you wish to dispose of, for whatever reason - recovery situations are our speciality - please contact us for discussion.

Write to: Box BB4001, Financial Times, One Southwark Bridge, London SE1 9HL

RETAIL CHAINS

Fast growing Retail Group wishes to aquire Companies with prime High Street locations. Any sector or region considered. Need not be profitable at present.

Please write to Box B 4002, Financial Times, One Southwark Bridge, London, SE1 9HL

BUSINESSES WANTED

Min £750,000 t/o
London & South East

Principals only.
Turnaround situations considered.
Any sector.

Box B3004, Financial Times, One Southwark Bridge, London SE1 9HL.

BUSINESS SERVICES

MOBILE Telephone Service
Anytime, Anywhere!

COMSAT, the world leader in mobile satellite communications, can provide you with reliable telephone service to and from any location in the world. Compact, Briefcase-sized SatPhone terminals offer high-quality, reliable access to international telephone, fax, and *data networks. One-stop-shopping convenience with terminals for* lease or sale; services at competitive rates. Major credit cards accepted.

Call: COMSAT Mobile Communications for more information or for the name of your nearest country agent.
Phone: 1-301-428-2222
Fax: 1-301-601-5951

OFFICE EQUIPMENT

OFFICE FURNITURE

Due to city bank order postponement we have a large quantity of quality executive and system ranges
-conferences and receptions.
Large choice of veneers: (Walnut, Rosewood, Ash etc.)

with discount of up to 40% from R.R.P.!

London Showroom for viewing
Please contact

LINEABURO LTD Tel: 01992 504530
FREEPHONE: 0500 821565

MAIL ORDER COMPANY FOR SALE

Well established Mail Order Company, with 36,000 name list and 40 page catalogue of exclusive products for sale. Original investors have insufficient funds to develop business to its full potential.
Sale of whole or trading name, list and catalogue considered.
Current turnover approx £620,000.

Reply Box B3242, Financial Times, One Southwark Bridge, London SE1 9HL.

PROFITABLE WASTE & SKIP HIRE COMPANY

North West based.

Looking to dispose of its waste transfer site which has direct access to the rail network.

Will also consider disposal of its skip hire business.

Contact: Andrew Sinclair
DTE Chartered Accountants
DTE House, Hollins Mount, Bury, Lancashire, BL9 8AT. Tel: 0161 953 9510

POWER TOOL SALES AND SERVICE *BUSINESS*

An established sales and service business with major agencies and servicing facilities, is offered for sale.

Please write in the first instance to **Allots, 11/13 Thorne Rd, Doncaster, South Yorkshire DN1 2HR**

FORMER 2000 SEAT CINEMA
FOR SALE FREEHOLD
LARGE NORTH LONDON CLUB
Suitable for Rock Bands, plays private parties, discos etc.
Fully fitted and operational.
£495,000
Licensed until 2.00 am.
Details Andrew Tearle
0181 766 6844

FOR SALE

Group engaged in the hire and sale of products to the building and construction industry - multi-million pound turnover and high margins.
Interested parties must disclose their identity.
Write to:
Box B3216, Financial Times, One Southwark Bridge, London SE1 9HL.

PROFITABLE

INTERNATIONAL TEXTILE PIECE-GOODS TRADING BUSINESS FOR SALE

due to Director's imminent retirement.

Write Box: B4005, Financial Times, One Southwark Bridge, London SE1 9HL

INDEPENDENT FINANCIAL ADVISERS CLIENT BANK / PRACTICE FOR SALE

Offers are invited for long established *Hertfordshire based firm.* Interested parties should write to **Box B3239, Financial Times, One Southwark Bridge, London SE1 9HL**

THE TIVERTON HOTEL
TIVERTON, DEVON

Prime by-pass location in 2.25 acres. 75 e s bedrooms. Excellent bar, restaurant & conference facilities. £181,345 trading profit on net T/O £952,258

OFFERS OVER £1.5 M FREEHOLD
ROBERT BARRY & CO.
(01285) 641642

EAST ANGLIA

Garage Business For Sale
Prominent site 1 mile from City Centre. Site area approx 1¼ acres.
Buildings 23,400 sq.ft.
Development Potential
Box No: B3241, *Financial Times*, One Southwark Bridge, London, SE1 9HL.

600+ LIVE BUSINESSES FOR SALE MONTHLY
Turnovers £1m – £100m
single copy £27
BusinesstoBusiness Bulletin
PHONE 0171 434 9992

USA WEST COAST

For Sale USD $450,000.00 (negotiable) Jewelry store bus & building since 1982, 2,000 sq. ft. Latin area, great opportunity for big corp. of family business.
Call: USA 1-310-830-4472 or Fax: USA 1-310-830-7714

Industrial Fastener Business For Sale

Box No: B3243,
Financial Times,
One Southwark Bridge,
London SE1 9HL.

ISLE OF WIGHT. *Freehold holiday centre* overlooking Sandown Bay. 199 chalets (52 vacant possession, remainder providing income from ground rent/service charge). 21 acre site with fine views, current season March - October. PRICE - £850,000. Contact SCOTCHER & CO. Tel: 01983 *822288 or Fax: 01983 825256.*

TOURIST HOTEL
in Central Area of the Norwegian Mountains
FOR SALE
Call: London - Mr Ali
0181 961 7421
Norway - Mr Sand
0047 33 77 25 40

FOR SALE

MIDLANDS BASED MANUFACTURER OF VEHICLE SECURITY AND MOTOR ACCESSORY PRODUCTS

This company trades under a well known brand name and has long established relationships with many major retailers. *Highly successful in the U.K. with superb production facilities and modern factory.* With new product ranges now ready to launch, offers a unique opportunity in the U.K and massive export potential. Serious offers. Principals only.
Write to Box No. B3240.
Financial Times, 1 Southwark Bridge, London SE1 9HL

PRESTIGIOUS INJECTION MOULDMAKING COMPANY

With established CAD, CAM and *Computer aided spark erosion.*

Highly skilled and loyal workforce with excellent customer base.

Turnover in excess of 1m. Situated northern home counties.

Write to Box B3183, Financial Times, One Southwark Bridge, London SE1 9HL

CATALONIA - SPAIN

Top location near Coast and Barcelona
Golf - Country - Club (18 holes) sells

- Plots to construct houses, first and second homes
- *Plots for hotel - Resort - Fitness centre*

For information please contact Tel: +34 72 - 55 35 73
Fax: + 34 72 - 55 37 38

BUSINESS SALE REPORT

The No. 1 independent listing of medium to large *businesses for sale in the UK (T/O £1m+).*
Don't miss the October issue out next week.
For sub details:
0181-875 0200

FOR SALE CONTRACT CLEANING CO

Established Home Counties Company. Owner wishing to retire

T/O £650,000 pa - Strong Gross Profits.

Write to Box No. B4006, Financial Times,
One Southwark Bridge,
London SE1 9HL.

QUALITY FOOD WHOLESALER

Established S-W wholesaler of fresh meats/chilled foods. Easy access M4.

T/O £2 million, GP 27% and sound client base with opportunity to expand.

Write to Box B3207, Financial Times, One Southwark Bridge, London, SE1 9HL.

ESTABLISHED BUSINESS BOOK PUBLISHER.

50 titles. Turnover c. £150,000.
15 titles contracted for future publication. NTA c £75,000
Box No. B4004, Financial Times, One Southwark Bridge,

CONTRACTS & TENDERS

CALL FOR EXPRESSIONS OF INTEREST
Provision of placing, assessment and counselling services

The Employment Service is investigating the scope for involving the private and voluntary sectors in the provision of placing, assessment and counselling services delivered to people with a wide range of long term health problems or disabilities which put them at a significant disadvantage in finding or keeping a job. This also involves working directly with employers to assist the recruitment or retention of individuals and to promote the implementation of good policies and practice.

This follows the Secretary of State for Employment's announcement in March 1995 that, following a Prior Options Review, he was asking the Employment Service to work up proposals for a market test of its disability services in one or two Regions. The Employment Service decided to test the external market for these services in its North West Region.

The Employment Service currently provides disability services throughout the country by means of 64 specialist teams known as Placing, Assessment and Counselling Teams (PACTs) which are supported by regional Ability Development Centres (ADCs). In the North West there are 7 Regional PACTs and an ADC which is based in Manchester. The main focus of the work is on face-to-face meetings with clients, agreeing actions on jobsearch and access to a range of services to help people with disabilities to find or keep work. PACTs also promote the disability symbol good practice initiative to employers. PACTs services may come to be affected by the implementation of the Disability Discrimination Bill currently in Parliament.

Work on testing the external market is still at a very early stage and no final decisions have been taken about what form, if any, of private or voluntary sector involvement will be most appropriate. The Employment Service wishes to invite any organisations which may want to promote all or elements of the future PACT and ADC service in the North West Region to express their interest now.

If you would like to express interest, please contact Judy Fordree quoting reference 035/01N no later than 13 October 1995 at Employment Service Head Office, Market Testing Branch, Nelson House, Furnival Gate, Sheffield S1 4DL on 0114 2596651. She will send you an information pack with further details, and you will have the opportunity to discuss your potential interest with ES representatives.

EMPLOYMENT SERVICE
Serving People through Jobcentres
Department for Education and Employment

LEGAL NOTICES

ACE AUTOMATICS LIMITED
(IN ADMINISTRATIVE RECEIVERSHIP)
Registered number: 1564564
Trade classification: Other activities 8829
Date of appointment of administrative receivers: 27 September 1995
Name of person appointing the administrative receivers: Barclays Bank plc
NEIL HUNTER COOPER and NIGEL RUDDOCK
Joint Administrative Receivers of
Robson Rhodes, Bryanston Court, Selden Hill, Hemel Hempstead, Herts HP2 4TN

YACHTS & POWER CRAFT

YACHT-51' BENETEAU

German Frers design. Immaculate condition,excellent for serious cruising, entertainment, management training. For sale at £160,000 o.n.o. or as co-lateral against business loan. Further info please phone 44-1475-522018

Excellent Retail Opportunity

Leasehold property in Home Counties with yields in excess of 15% per annum. Price - Circa £300k.
For further details, please contact
Box No B3237, Financial Times, One Southwark Bridge, London SE1 9HL.

LIQUIDATIONS AND RECEIVERSHIPS

Every week every company that has gone into liquidation or receivership what they did and who the liquidator or receiver is
Tel 01 472 371286 or Fax 371 458
For further details.

TECHNOLOGY

ROBOTICS AT WORK

Japanese researchers are developing robots for use outside the usual factory environment, writes Bethan Hutton

Break with tradition

Japan has long been the world leader in the use of robots, and the Japanese car industry has been the epitome of advanced automation. So when last year Toyota, the car manufacturer, unveiled its latest production line where the number of robots had been reduced, observers started to wonder if the tide had turned.

Technological progress, even in Japan, is not immune from economic influences. The poor state of the economy has hampered many companies' investment in automation, and cut their budgets for research.

Robot production in Japan peaked in 1991, and dropped very sharply in 1992 as the country went into recession. The trend is now upwards again, but the 1991 level has not yet been regained.

Of course, some development has continued, even through the recession. Shozo Nimura, a director of Fuji Machine, one of Japan's five leading robot manufacturers, says that the recent demand has been for robots capable of higher speed and greater accuracy. Fuji mainly makes robots for use in the semiconductor industry. Two years ago, a Fuji robot could mount one chip every 0.2 seconds: it now takes only 0.09 secs, and customers are demanding still faster robots.

Matsushita – the market leader – has responded to the increasing use of robots in the semiconductor and electronics industries. One of its current areas of research is "clean room" robots. Traditional robots produce waste that can cause damage during the production of semiconductors and LCDs, but Matsushita has reduced waste levels significantly and is aiming for 100 per cent waste-free robots.

Recently, the rapid "hollowing out" of Japanese manufacturing industry – shifting production abroad to areas of low labour costs – has cut demand from core industrial users, such as car makers and electronics companies. But Toyota says there is a place for robots even in low-cost countries, because of the consistent quality levels that automation can bring.

Kanji Yonemoto, executive director of the Japan Robot Association (JARA), says that even in the domestic Japanese automobile industry, the use of robots has not yet reached saturation point. "Of course there is work done by humans which cannot be done by robots, but with the development of technology, perhaps robots can replace humans in those areas as well," he says.

In times of rising unemployment, however, mention of robots replacing human workers can cause resentment. Perhaps that is why Toyota increasingly talks of its robots as supporting human employees and helping to make them more efficient, rather than directly replacing them.

Tadaaki Jagawa, general manager of Toyota's Tahara plant in central Japan, says the company is pursuing two ideas in its use of robotics. "One is that we would like the most sophisticated multifunction robots, which can work the same as human beings. But on the other hand, we want other robots which do not replace human beings and workers, but which can support and assist human beings.

"We would like to develop more 'assisting' robots for the workers, so that workers can improve their productivity, and can have easier working conditions. When we were using high-function, more sophisticated robotics, people had a hard time, because maintenance was very difficult. The workers were assisting the robots," Jagawa says.

That worker-centred approach was one of the concepts behind Toyota's new production line at Motomachi, outside Tokyo. But economic and management factors were also involved in the decision to keep automation levels low: managers were not sure which models would eventually be produced at that plant, and so wanted to maintain maximum flexibility by not installing model-specific automation. Also, plans for the plant were made at the depth of the recession when investment was being sharply reduced.

The rush towards automation in the 1980s was spurred on by the fear of labour shortages. Now, unemployment in Japan is increasing, but the assumption is still that once the current economic difficulties have passed, demographics mean that the trend towards labour shortages will resume, and robots will be used to supplement increasingly scarce human resources.

That also means that more applications for robotics will be found outside the traditional industrial processes. JARA was until recently called the Japan Industrial Robot Association: the name-change illustrates the growing importance of non-industrial robots. Yonemoto of JARA sees the most fertile fields for development as medical and social welfare, nuclear power, ocean exploitation, agriculture and forestry, construction and transport.

In trying to develop robots for use outside a factory environment, researchers have been bypassing humanoid or machine-like robots and looking at nature for inspiration. NEC has just released a snake-like robot which can worm its way into tight spaces, such as collapsed buildings, or nuclear power stations, where more conventionally-designed robots could not go.

One of the most futuristic projects is an industry-wide research project into micromachines, led by the Ministry of International Trade and Industry. Micromachines are conceived as highly miniaturised robots – a few millimetres across or less – which could have applications in many industries, from nuclear power plants to medicine. For example, micro-robots could be inserted into human arteries to carry out micro-surgery in inaccessible places, or they could be sent into machines to carry out repair or maintenance work without having to dismantle the entire structure.

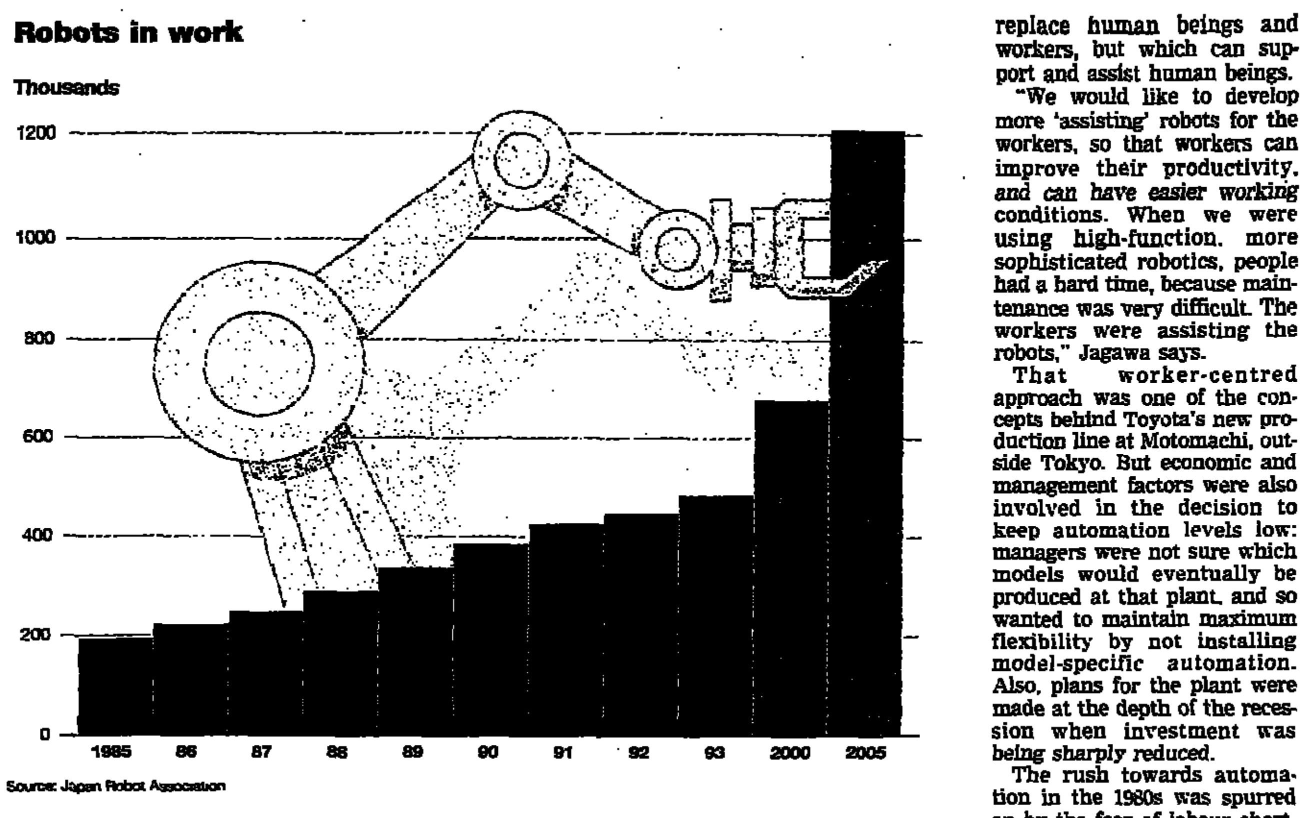
More than 30 companies are involved in the project, each carrying out research into a specific detail, such as miniaturised power supplies or means of propelling tiny robots, and sharing their findings with the group.

Lower-tech robots are already used in some of the larger hospitals in Japan, for delivering meals and medication round the wards. But robots that interact directly with patients – for example, administering medicine or handling bedpans – are still some way in the future.

Robots are also finding their place in service industries. Factory-style sushi restaurants have long been familiar in Japan: customers sit at a bar and choose from plates passing before them on a conveyor belt. Usually, the sushi is made in the traditional way – shaped by hand by a chef with long and expensive years of training behind him. But now some of the work may have been done by a robot sushi chef, which can pat the balls of rice into shape in a deft imitation of the human chef's art. However, a robot has not yet been invented that can transform a raw fish into perfect artistic slices to put on top of the rice.

If robots are being welcomed into Japanese kitchens, hospitals, building sites, even police stations, one car factory with fewer robots does not spell doom for the industry. The ardour may have been cooled by the recent economic climate, but the long Japanese love-affair with robots is far from over. Jagawa is firm: "We have never given up our commitment to using robots."

Next month the series looks at robots in the lab.



Short sharp shock for buses

Anna Kochan on an explosive process for cleaning air filters

Explosion technology is enabling air filters from trucks and buses to be recycled instead of thrown away.

A short sharp shock, carefully applied, removes all the dirt and dust that has accumulated in the filter, increasing its life as much as six-fold, according to Seditec, which developed the process.

Seditec, an Israeli company, has won its first contract for the Filter Impulse Cleaning System, which will recycle 10,000 filters a year for the Dan Bus Corporation in Tel Aviv.

The technology could significantly cut running costs for vehicles that use diesel fuel, such as trucks and buses. Filters on these vehicles clog up quickly and have to be replaced every few months because the air entering the combustion chamber of the engine must be as clean as possible to reduce fuel consumption and engine wear.

Existing methods of filter recycling are so expensive or environmentally unfriendly that most filters are thrown away, says Elik Cohen, Seditec's marketing director.

In the Seditec process, an explosion is created by burning a mixture of air and gas. The innovation lies in controlling all the parameters of the combustion process to create an ultra-short high amplitude shock wave. This is then used to apply a uniform force to the filter to dislodge the dirt particles without damaging the filter paper. The particles are sucked away by a vacuum.

The $75,000 (£48,400) Seditec machine processes one filter every four minutes, although this is likely to increase, says Cohen. The operator places dirty filters one at a time in the machine, closes the door, initiates the explosion, and removes the clean filter.

A paper filter can undergo at least six shock treatments without suffering irreparable damage. The number of times that a filter has to be replaced depends on the environment that it works in but a Dan bus, operating in rural areas, would need to have its filter changed four times a year. According to Cohen, any bus company operating a fleet of at least 200 vehicles could justify purchasing the machine.

At present the technology applies only to paper filters but development for other materials is being carried out. The technology has been patented in the US and patents for the rest of the world have been filed.

Recognising the value of reducing volumes of waste in the country, the Israeli ministry for the environment offers Israeli companies a 35 per cent rebate on the price of the Seditec machine.

It is not only bus companies that may be interested. Air filters are also used in tanks, bulldozers, and gas turbines. The air filter in an army vehicle is cleaned daily and replaced once a week, while a truck working in a cement quarry needs to have its filter replaced every two weeks.

Another industrial application is the unblocking of storage silos. For three years prior to Seditec's intervention, three of the six outlets of a cement silo at a lime factory in Israel were permanently blocked, significantly reducing production.

Seditec's solution was a controlled explosion designed to create a shock wave followed by a pressure wave which travels down the wall of the silo, loosening the material and encouraging it to flow again.

The technology is suitable for cement, lime, concrete production and mining operations all of which make use of inert bulk materials in large quantities. The only other option is to vibrate the silo, but this can cause structural damage.

Controlled explosions can also be used to control pollution emissions. Electricity companies which burn coal, for example, cannot release smoke into the atmosphere without treating it. The standard approach is to use static electricity to trap particles on electrodes that are built into the chimney walls. However, as the electrode becomes thick with particles, the electric field weakens and the process is no longer effective.

The removal of this particle build-up is, according to Cohen, an ideal application for Seditec because the explosions used to dislodge the deposit are generated in direct relation to its thickness. This is accurately determined by sensors measuring pollution levels in the air entering and leaving the chimney. Such an approach improves air filtration by 20 per cent in terms of particle size and quantity of particles released, he claims. It is also cheaper than the classic solution in which a mechanical hammer repeatedly taps the electrode, irrespective of the amount of deposit.

CONTRACTS & TENDERS

Great artist with vision

Without Cézanne there may not have been any modern painting at all, argues William Packer

With this remarkable, beautiful and rather moving exhibition, the *Réunion des musées nationaux* continues its magisterial series of studies of the work of the greatest masters of French painting. And not least remarkable is that while this is the first full retrospective in a great public gallery to be given to Cézanne since 1936, it is by no means the daunting block-buster we might have expected. Indeed, though the catalogue could break your foot, at a mere 177 works occupying just two floors of the Grand Palais, the show is on the smaller side for one of its importance, and as well-chosen as could be wished.

But why so important? The truth is, and it is a truth that becomes more apparent with every fresh view we take of Cézanne, that of all the painters of that early, heroic phase of modern painting, without him there might well have been no modern painting at all. He is the link. In his formative years in the 1860s, we see him standing with Manet and Courbet looking back to the great humanist tradition of figurative painting in the west. And then we find him, if only for a comparatively short time, *au courant* with his Impressionist peers in the 1870s, with Sisley, Monet and Pissarro painting along the Seine and the valley of the Oise, to the north of Paris.

But even then, even in such works as "The House of the Hanged Man" at Auvers-sur-Oise of 1873, or his view across the roofs of that village, again of 1873, we find him moving beyond impressionism and immediate sensation into his own world of form and structure and the study and control of the pictorial space. With his increasing commitment to his native Provence from the later 1870s, with its clearer light and sharper definition, his palette becomes at once heightened and more simple. The pictorial integrity, the formal rigour and austerity that follow upon such clarity and simplicity of vision, are what combine in his unique gift and influence.

The direct line on through Cubism to Constructivism, and on even to latterday minimalist abstraction, is well-attested and easy enough to trace. What is, or rather was less obvious, is the degree to which Expressionism, that other apparently opposing formal strain in modernist painting, is also forever in debt to him. For the truth which Cézanne demonstrates through his own stubborn, obsessive practice is that without form and structure and control there can be no expression, no art. Matisse realised as much as a young man when he acquired a small painting in the "Bathers" series to which Cézanne returned throughout his career. Matisse kept it beside him for more than 30 years as constant encouragement and consolation in his own moments of creative doubt. Dating from about 1880, it is of three imagined nude figures beneath an arch of trees, and small as it is, we can see in the simplicity of the backs they turn upon us rather more of a hint at the monumental grandeur of Matisse's own great reliefs of women's backs, more than life-size and cast in bronze.

Why should this show be so moving? The answer can only lie in something of what it tells us of the human spirit. For Cézanne was never an easy painter. Exquisitely beautiful though so many of the works actually are, we seldom gasp at their fluency and facility. Often they are downright awkward, and always there is the sense that they have been fought for and only then achieved. Ironically enough, *pace* Matisse, this is nowhere more apparent than in that extended "Bathers" series: only the two huge canvases, circa 1900, the largest he ever made and which end this show, achieve any full resolution.

For the most part these works remain a problem, as do all those upon which Cézanne worked from the imagination rather than from direct observation. It is not that he had no academic training, and indeed his early life-drawings are more than adequate: rather it is that he seems to have been one of those artists who need the model always before them. And when the model is there, whether in the rapid expressionist studies he made in the shadow of Manet in the 1860s or the studied tranquility of the later portraits, he is marvellous. Other painters have painted their wives repeatedly, but few so often and with such evident and deep affection. He is surely one of the great masters not of the nude, but of the figure sitting before him, and of the head most of all.

But really it is as the painter of space, and of objects related within that space, that he is greatest of all. His wife sits in the chair before him, a curtain falling beside her, or a door behind: the apples are spread out across the cloth which falls towards us over the table's edge, a jug behind and space beyond – a world in miniature. And always there is the landscape, the stream and the bridge, the house, the trees, the rocks, and away in the distance at an infinite space the great height of the mountain of Sainte-Victoire, again and again and for ever.

If Cézanne is a great artist, and his work so moving, it is for the affirmation that he makes of the importance of art to the human spirit, and of painting above all in its lasting validity as a vehicle for its expression. In these days, when painting from the visible world is so glibly written off as an irrelevance, it is an affirmation of profound importance. He died in 1906, and towards the end of his life his fellows recognised him as their master. So long as there are true painters, they too will turn to Cézanne. For his part, we should allow him the last word as to how he saw himself in the great scheme of things: *"on ne se substitue pas au passé, on y a ajoute seulement un nouveau chainon"*. One does not substitute oneself for the past: one only adds another link to the chain – and Amen to that.

Cézanne will alway be an inspiration to all true painters: 'Garçon couché', 1890, in the exhibition at the Grand Palais

Cézanne – au tournant de la modernite: Grand Palais, Paris, until January 7, then to London and Philadelphia: sponsored in Paris by LVMH/Moet Hennessy, Louis Vuitton and Christian Dior.

Concerts

'Period' and 'tradition'

On Friday the Vienna Philharmonic made a triumphal return to the Royal Festival Hall to be greeted by a full house, including a larger contingent than ever of their Japanese devotees. What do they make of a work like Richard Strauss's *Ein Heldenleben*, luscious western decadence at the very limit of Romantic absurdity?

As conducted by Lorin Maazel, coollest of professionals, it sounded calculated but colossal. While the final peroration stretched out inordinately – the Hero's Retirement and Fulfilment: Strauss was 34 when he composed it – one was torn between admiration, sympathy and helpless mirth. Earlier the Critics' skew-whiff music had been superbly dramatised, every carping instrument stamped with character, and the orchestra's leader impersonated the Hero's Wife (Strauss's difficult Pauline) with brilliant violinistic fantasy and dash. (The VPO is an all-male orchestra, by the by; but *Heldenleben* needs two harps, and the second here was a woman. Though the programme included even "Retired Members", it mentioned only a "*Harp: Harald Kautzky*".)

In Schubert's "Tragic" Symphony, the C minor, Maazel knew exactly what he wanted and the VPO gave him exactly that: no sweet illusion of lyrical spontaneity about it. He chose to play Stravinsky's 1919 suite from the *Firebird* ballet, not the 1911 one for the larger original band presumably because the VPO could produce such a glorious blaze for the 1919 Finale. The earlier movements, taken with deliberate care, would hardly have inspired anybody to dance, and Maazel turned the eerily tender Berceuse into Rakhmaninov. There *is* a hint of that, but one would rather not be reminded.

A fascinating programme-note in opaque English, very *mittel-europäisch*, detailed the unique features of the VPO's inherited instruments and their sedulously nurtured style of playing them. At the Barbican the next evening, Roger Norrington and his London Classical Players put up a resounding challenge in "authentic" period terms, with 1870s instruments used as the best research indicates that they were.

Woodwinds and brass balanced equally against the strings, not overwhelmed by them; *vibrato* not routinely turned on, but reserved for special expressive effects: *tempi* distinctly swifter and lighter than the post-Strauss tradition has favoured. In Bruckner's 3rd Symphony – the original version, not one of the compromised rewrites – the result seemed a revelation. It danced and sang, and its undisguised Wagnerian echoes were rendered at once homely, plain and abrupt, not elaborately lubricated as in Bruckner's later drafts.

One longs to hear Norrington mount his challenge in later Bruckner too, against the ponderous "tradition". His *Meistersinger* overture here, dispatched for once within Wagner's preferred time (just over eight minutes), sounded an ideal preface to a musical comedy: buoyant, bantering and still dazzlingly clever. The tradition which prescribes soulful majesty for it is surely a bit of a con, aiming at premature encapsulation of depths that take all the rest of the opera to fathom. When Mahler, who had a famously vexed conductorship with the VPO, declared that pious "tradition" was mere *Schlamperei*, unthinking laziness, he had a point to make.

David Murray

Theatre

Mitchell's 'Lear'

Warren Mitchell neither is, nor tries to be, remotely monarchical in the title role of Jude Kelly's strange production. He is clearly in his dotage from the first, affectionately cuffing courtiers and coldly groping his daughters when he talks of their issue. This Lear is, in effect, already enjoying power without responsibility; it is his notion to formalise and extend this state of affairs which sets off the calamitous chain of events.

In his bush-hat and sandals, Mitchell's Lear could as easily have been a cracked mogul as a king, a Howard Hughes-like figure whose subordinates either dare not speak plainly to him or incur his volcanic wrath if they do. The corporate image is stronger in the early scenes of the Gloucester plot; Trevor Baxter's impeccably groomed, pinstriped Earl, Damien Goodwin's bookish, adolescent Edmund plotting in his bedsit and Robert Bowman's Edgar with his jeans and brandy snifters recall the atmosphere of *Hamlet Goes Business*. By Act III, however, all initial airs are dispelled as both Lear and Gloucester enter an outside world which is far crazier than the court.

Kelly's recklessly anachronistic setting of the play (in Paul Andrews' design) is both one of the major strengths and weaknesses of the production. These events could be taking place in any era; Act V's armed camp mingles ornate pike-shafts with chemical warfare suits, locating the battlefield somewhere between the worlds of *Mad Max* and *Dr Who*. Yet elements frequently seem to possess a bewildering hidden symbolism – why, for instance, does Edmund have a set of twinkling sea-mines strung from the ceiling of his room? Why does the disguised Kent resemble a New Age Maori? And might it not be a tad insensitive to put a practical rainstorm on stage while Yorkshire Water has a drought order in force? There are too many ideas on display, too many even for this richest of Shakespearian plays.

However, many touches are inspired. Cordelia's expressions of trepidation before her testament of filial love are cut, allowing her to become neither a blunt-speaking angel nor a "feisty" girl, but simply matter of fact and resolute throughout Maria Miles' fine characterisation. The Bedlam beggars whom Edgar impersonates are constant presences on the road to Dover, helping him to guide the blind Gloucester and even supplying a mattress to break the latter's fall.

Damien Goodwin handles Edmund's transition well, from venomous dreamer to adulterous, martial demon. Tricia Kelly and Alexandra Gilbreath as Goneril and Regan show real horror at the love contest and their father's subsequent asinine revelry, although their continuing sisterly solicitude even as one poisons the other is more puzzling. Toby Jones is a mightily impressive Fool, evidently accomplished at the capers and gags he performs but who can no longer be bothered with pretending to be stupidly merry in the face of Lear's much greater foolishness and genuine madness, and finally hangs himself on stage.

Which brings us back to Mitchell. This mad Lear, after his initial outburst on the heath does not vie with the storm in bluster, but subsides into rapid monomaniacal mumbling. Despite occasional inaudibility, it is more chilling for being less theatrical, and adds poignancy to his correspondingly low key recovery and death. The final scene likewise restores full lucidity to a production which frequently frustrates, but never loses attention.

Ian Shuttleworth

West Yorkshire Playhouse until October 28 (0113 244211), then Hackney Empire from November 9 - December 3 (0181 985 2424).

Theatre/**Sarah Hemming**

Return of 'Three Tall Women'

Last week was certainly ladies' week in the theatre. At the Olivier Judi Dench, Patricia Hodge and Sian Phillips glittered in *A Little Night Music*; in Chichester, Lauren Bacall graced the stage in *The Visit*. And Dame Maggie Smith sailed back into the West End to reprise her award winning performance as the aged crone at the centre of Edward Albee's *Three Tall Women*.

And a splendid performance it is, milking Albee's rather slight play for every drop of nourishment. For while it is cleverly constructed, witty and insightful, it is also twice as long as it needs to be.

Albee has made no secret that the play is a reckoning with his own painful relationship with his adoptive mother. The first portrays a cantankerous, senile nonagenarian, who rambles on in endless circular stories and rages at everyone who comes near her, while a hapless helper and young female lawyer struggle to keep a foothold in her slithering version of reality.

But the second act offers reconciliation as Albee blows open the play's structure and the three women on stage become three versions of the one person – in youth, middle and old age. Perhaps we are in her stroke-seized mind or perhaps in some alternative timescape, but this clever device enables the characters to spread the whole life out before us, so we arrive, along with Albee, at a respect for the woman's sheer ability and determination to survive.

The play is far more than a personal laying of ghosts, however: Albee transforms his subject into a reflection on age and unfairness and, as in *Who's Afraid of Virginia Woolf*, celebrates his character's tenacity in the face of the awfulness of life. In the programme he writes that "writers have the schizophrenic ability to both participate in their lives and, at the same time, observe themselves participating in their lives" and one cannot help feeling that this play, in its structure at least, is just as much about his own position as a writer as it is about his mother. Interestingly, it is only in the passages of the play that deal with the woman's son that the transformation does not work and bitterness curdles the art: these come over as clumsy and mawkish.

The play is sophisticated, observant and grimly funny, playing on our common fears of ageing and decay. But it is also, by definition, static, repetitive and restricted, constructed more like a sung canon than a drama. It takes a disciplined and expertly phrased production to carry this off, which Anthony Page provides, and three superb performances, which Maggie Smith and her new companions, Sara Kestelman and Samantha Bond, handsomely deliver.

Dame Maggie is a joy, a decrepit mountain of rancour in the first half – eyes blinking, mouth pursed, she looks like a tortoise newly acquainted with the light. She manages to both infuriate and provoke great sympathy, piteously suggesting all the terror of losing control. In the second act, on the other hand, she has the regal bearing and grace of the bloom of old age. Samantha Bond is touching as the youngest woman, horrified as she confronts emptiness of her life, and Sara Kestelman is excellent in the difficult, menopausal role, offering a wonderful combination of warmth, bitterness and resignation. An evening of superb performances that carry the play on when it has outrun its course.

Wyndham's Theatre, London W1.

INTERNATIONAL ARTS GUIDE

■ BALTIMORE

GALLERIES

Baltimore Museum Tel: (410) 396 6310

● *Celebrating Calder*: sculpture, jewelry, drawings and tapestries by the 20th century artist Alexander Calder; from Oct 4 to Jan 7

■ BERLIN

CONCERTS

Konzerthaus Tel: (020) 309 21 02/ 21 03

● Berlin Symphony Orchestra: with oboist Martin Gabriel. Yoël Levi conducts Greig, Mozart and Bartók; 8pm; Oct 7, 8 (4pm)

OPERA/BALLET

Deutsche Oper Tel: (030) 34384-01

● Boris Godunow: by Mussorgsky. Conducted by Rafael Frühbeck de Burgos and directed by Götz Friedrich. Soloists include Matti Salminen, Mariana Cioromila and Camilla Capasso/Hermine May; 6pm; Oct 3

● Das Rheingold: by Wagner. Conducted by Jiři Kout and directed by Gö Freidrich. This is the first part of the complete "Ring Cycle" to be performed in October; 7.30pm; Oct 6

● Die Walküre: by Wagner. Conducted by Jiři Kout, and directed by Götz Friedrich; 6pm; Oct 8

● Siegfried: by Wagner. Conducted by Jiři Kout and directed by Götz Friedrich; 5.30pm; Oct 12

■ BONN

GALLERIES

Kunst-und Ausstellungshalle Tel: (0228) 917 1236

● Art in Germany: contemporary art works from the State Collection; to Oct 8

■ FRANKFURT

CONCERTS

Alte Oper Tel: (069) 1340 400

● Recital Evening: with soprano Barbara Hendricks and pianist Staffan Scheja. The programme includes Schubert, Wolf, Poulenc and Shönberg; 8pm; Oct 4

● South Western Radio Orchestra: with sopranos Dame Gwyneth Jones and Jane Giering, and mezzo-soprano Ingrid Bartz. Peter Falk conducts a Viennese evening that includes pieces from Strauss' "Rosenkavalier" and "Der Fledermaus"; 8pm; Oct 3

■ LONDON

CONCERTS

Queen Elizabeth Hall Tel: (0171) 928 8800

● Purcell in the Theatre: Michael Rosewell conducts the Kent Opera Baroque Ensemble to play Purcell and Tippett; 7.30pm; Oct 3

Royal Festival Hall Tel: (0171) 928 8800

● Philharmonia Orchestra: with pianist András Schiff. Kurt Sanderling conducts Beethoven's piano concertos two, three and four; 7.30pm; Oct 7

GALLERIES

Royal Academy Tel: (0171) 439 7438

● From Manet to Gaugin: Impressionist and post-Impressionist paintings from Swiss private collections; to Oct 8

OPERA/BALLET

Royal Opera House Tel: (0171) 304 4000

● Arianna: by Goehr. World premiere directed by Francesca Zambello and conducted by Ivor Bolton. A mixture of contemporary and Baroque music, reinterpreting the myth of Ariadne's abandonment by Theseus. Soloists include Susan Graham, Anna Maria Panzarella, Sheila Nadler and Axel Köhler; 8pm; Oct 4

● The Marriage of Figaro: by Mozart. Conducted by Bernard Haitink/David Syrus and directed by Patrick Young. Soloists include Felicity Lott/Cheryl Studer, Andrea Rost/Barbara Bonney and Robin Leggate/Ryland Davies; 7pm; Oct 3, 7, 10, 13

● Tosca: by Puccini. Conducted by Simone Young and directed by Jeremy Sutcliffe. Soloists include Galina Gorchakova, Johan Bohta and Francis Egerton; 7.30pm; Oct 5, 9, 12

THEATRE

National, Lyttelton Tel: (0171) 928 2252

● Wild Oats: by John O'Keefe, directed by Jeremy Sams. A palpable actor descends upon a sleepy Hampshire village; 7.30pm; Oct 3 (2.15pm)

■ NEW YORK

GALLERIES

Guggenheim Tel: (212) 423 3500

● Claes Oldenburg: an anthology of works by one of the key figures of Pop art in the 1960's. This exhibition includes a new piece entitled "Shuttlecock"; from Oct 6 to Jan 14

■ PARIS

CONCERTS

Champs Elysées Tel: (1) 49 52 50 50

● National Orchestra of France: with pianist Viktoria Postnikova. Guennadi Rojdestvenski conducts Prokofiev's "Concerto No.1", "Concerto No.4" and "Concerto No.5"; 8pm; Oct 5

● National Orchestra of France: with pianist Viktoria Postnikova. Guennadi Rojdestvenski conducts Prokofiev's "Concerto No.2" and "Concerto No.3"; 8pm; Oct 7

GALLERIES

Centre Georges Pompidou Tel: (1) 42 77 12 33

● Man Ray: recreation of the atmosphere of Ray's post world war two workshop where he produced various furniture. This exhibition consists of paintings, drawings and photographs from the workshop archives; from Oct 4 to Jan 29

● Surrealistic Designs: vision and technique. About 60 masterpieces by artists such as Ernst, Masson, Brauner, Dali, Miró and Picasso; from Oct 4 to Nov 27

Musée d'Art Moderne, Ville de Paris Tel: (1) 47 23 61 27

● Louise Bourgeois: sculptures and drawings from 1938-1995. Significant art works that chart her different styles; to Oct 8

OPERA/BALLET

Châtelet Tel: (1) 40 28 28 40

● New York City Ballet: performs the Robbins choreographed "Watermill" with music by Ito and "The Goldberg Variations" with music by Bach; 8.30pm; Oct 4, 5

● New York City Ballet: in a programme that includes the Balanchine choreographed "Cocerto Barocco" and "Walpurgisnacht Ballet" plus Tanner's "Ancient Airs and Dances" and Martin's "Fearful Symmetries"; 8.30pm; Oct 6, 7

● New York City Ballet: performs the Robbins choreographed "Watermill" with music by Ito and "The Goldberg Variations" with music by Bach; 8.30pm; Oct 7 (3pm)

Opéra National de Paris, Bastille Tel: (1) 47 42 57 50

● Romeo and Juliet: music by Prokofiev, choreography by Rudolph Nureyev and directed by Ermanno Florio/Vello Pähn; 7.30pm; Oct 3, 6, 7

■ STUTTGART

OPERA/BALLET

Staatstheater Tel: (0711) 2 03 20

● La Damnation de Faust: by Berlioz. Conducted by Gabriele Ferro and directed by Luciano Damiani. Soloists include Marilyn Schmiege, Keith Lewis and Ludwig Baumann; 7pm; Oct 6

■ VIENNA

CONCERTS

Gesellschaft der Musikfreunde Tel: (1) 505 1363

● Austrian Radio Symphony Orchestra: with alto Iris Vermillion. Pinchas Steinberg conducts Einem, Korngold and Bruckner; 7.30pm; Oct 13

■ WASHINGTON

GALLERIES

National Gallery Tel: (202) 737 4215

● A Great Heritage: Renaissance and Baroque drawings from Chatsworth consisting of 105 works by artists such as Rembrandt, van Dyck and Raphael; from Oct 8 to Dec 31

THEATRE

Arena Stage Tel: (202) 488 3300

● Holiday Heart: by Cheryl L. West. A play about hope and redefining the family; to Nov 19

Kennedy Center Tel: (202) 467 4600

● Hello Dolly: by Jerry Herman. New production starring Carol Channing; to Oct 8

Roundhouse Theater Tel: (301) 933 1644

● Nora: by Henrik Ibsen, adapted by Ingmar Bergman and directed by Tom Prewitt. Drama with the doll-like young wife; 8pm; to Oct 8

Studio Theater Tel: (202) 332 3300

● Slavs!: Thinking About the Long Standing Problems of Virtue and Happiness. By Tony Kushner and directed by Dan DeRaey. A surrealistic montage of post-Soviet culture; 8pm; to Oct 8

Woolly Mammoth Tel: (202) 488 3300

● Watbanaland: by Doug Wright, directed by Lee Mikeska-Gardner. Surreal drama of life and longing in an overpowering society; 8pm; to Oct 8

WORLD SERVICE

BBC for Europe can be received in western Europe on Medium Wave 648 kHZ (463m)

EUROPEAN CABLE AND SATELLITE BUSINESS TV

(Central European Time)

MONDAY TO FRIDAY

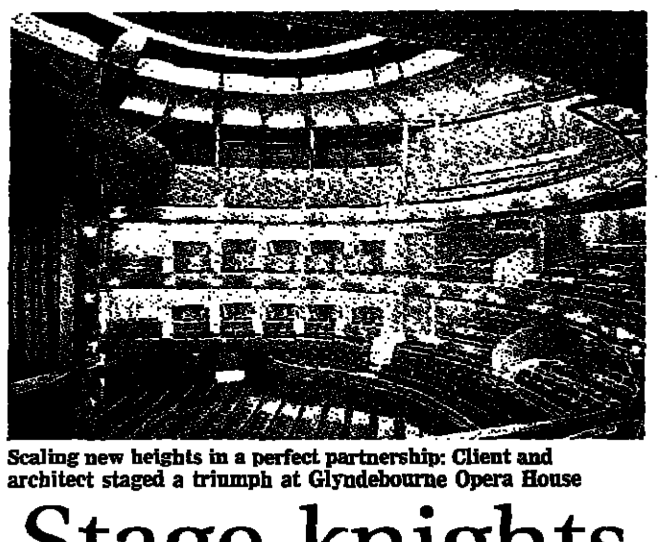
NBC/Super Channel:

07.00
FT Business Morning

10.00
European Money Wheel
Nonstop live coverage until 14.00 of European business and the financial markets

17.30
Financial Times Business Tonight

Midnight
Financial Times Business Tonight



Scaling new heights in a perfect partnership: Client and architect staged a triumph at Glyndebourne Opera House

Stage knights take a bow

Colin Amery on the FT Architecture Awards

Architects do not work in a vacuum – they are part of the nation's construction industry. Last night's ceremony at London's Tate Gallery to announce the winners of the Financial Times Architecture Award comes at a time of modest optimism for the UK architectural profession and those who construct large public buildings.

Construction output is set to rise by some 2 per cent next year, according to Cambridge Econometrics, the forecasting group. While this is no great leap forward, most of the growth is attributable to funding from the National Lottery.

Much of the new work will therefore be public commissions for buildings in sport, the heritage and the arts – the showcase projects that architects particularly like designing. During the past 20 years, the UK has produced some outstanding architects and they are reaching their prime just as the lottery money is coming on stream.

This year's FT award went to a building that typifies this new generation: Glyndebourne Opera House in Sussex, designed by Michael Hopkins and Partners.

To replace a much-loved musical gathering place in a beautiful English country setting by a contemporary building without making enemies is a great feat. Sir Michael Hopkins achieved this through the brilliance of his architecture: he is the acceptable face of modernism, as Glyndebourne demonstrates very clearly.

However, it has to be remembered that there is not one great building in history that did not have a powerful client: in Glyndebourne's case, it was Sir George Christie, the opera house's owner.

Sir George knew what he wanted. He raised all the money from the private sector, avoiding the need to please the sort of quango that vets publicly funded projects. And he forged a partnership with his architect while keeping overall control.

There are also architectural lessons to be learned from Glyndbourne. Hopkins has proved that it is possible to add on to an ancient manor house and still build a contemporary and functional building.

He has done this by being very careful to keep the new building in scale with its surroundings. Skilful use has also been made of local materials: Glyndebourne may be the most up-to-date theatre but its bricks are hand-made, and finely worked timber sits alongside the concrete structure in the auditorium.

There is a humanity about Glyndebourne – something we all long for in new buildings. Hopkins demonstrates that achieving this does not require the architect to ape the past. His auditorium at Glyndebourne is as timeless as the Pantheon but there is not a classical column in sight.

The quality of this year's shortlist for the FT award shows just how high the standard has become, and how hard the jury had to debate to select a winner.

Glyndebourne's competition included Eurostar's channel tunnel rail link terminal at Waterloo by Nicholas Grimshaw and Partners. The gracious and elegant terminal has made arriving in London more glamorous than reaching the Gare du Nord in Paris.

Another outstanding building for a commercial company is architect Richard MacCormac's new training college for Cable and Wireless. This combines academic calm and commercial acumen in a generously landscaped setting near Coventry.

Retailer J. Sainsbury made the long shortlist for their Plymouth store by Jeremy Dixon and Edward Jones, a building designed to look as if it is sailing into the harbour.

The architectural profession has been much battered by the recession but the best practices have survived well by adapting to the new commercial climate. Architects have had to adjust extensively to fee bidding and competition – partly in response to EU rules on public contracts. Not many professions have to compete so furiously against their own colleagues, a process that requires huge amounts of time in preparing proposals for projects that may come to nothing. In many limited architectural competitions, there is no payment.

Architects now need skills in computer-aided design, in addition to marketing and financial ability. They also have to have management skills to secure a role in the construction team equal to that of the all-powerful project manager. Virtually none of these skills is taught during their expensive seven-year training.

In the end architects are judged by their buildings and awards such as the FT's are valuable ways of informing the client community about the best that British architects can provide.

There can be no doubt of the quality of this year's winner. Like any great operatic performance, Glyndebourne shows the value of teamwork as well as design. The architect, the client and the consultants worked brilliantly together to build at speed and with conviction.

This year's winner should be the lodestar for future lottery buildings and stands as the perfect example of informed patronage.

Europa: Patrizio Merciai

A currency melodrama

Few today would bet a penny on the Swiss franc declining in value. The currency's spectacular appreciation in the past few months has forced down domestic interest rates, and led to substantial increases in the value of Swiss bonds and blue-chip stocks.

Its irresistible rise, we are told, has been caused by the flight of German capital inevitably triggered by the planned switch to a single European currency. When Germany replaces good D-Marks with banana-republic Ecus (or Euros), this line of reasoning continues, the Swiss franc will be the only currency that embodies traditional monetary virtues. Not only will it be stuffed under mattresses, but every European institution seeking a diversified portfolio will have to hold it. Since the Swiss money market is so small compared with the D-Mark area's, the result could be a tidal wave to engulf even the tallest Alpine peaks.

The only defence Switzerland would be able to muster would be to impose negative interest rates and other restrictions on non-resident deposits, just as it did in 1978.

Such catastrophe scenarios have been the main topic of conversation in the cafés of Zurich and Geneva this summer. Let us now look at what is really happening.

There can be no denying that there has recently been an influx of German capital into the Swiss market. It is also true that for a few months there was a good deal of optimism about European monetary union. There were even those who believed that an arrangement would be found to enable the weak currencies to get around the strict Maastricht convergence requirements. That is why, until September, those currencies were rising against the D-Mark and the high-yielding bond markets were performing so well.

But the situation was abruptly reversed when, on the last day of summer, a seemingly innocuous comment by Theo Waigel, the German finance minister, brought everyone back to earth. Since then, the D-Mark has regained ground against the weak currencies and the Swiss franc. And for once, the weakness of the dollar, which usually boosts the Swiss franc against the D-Mark, failed to have any effect.

In Switzerland, the official discount rate is mostly symbolic because no transactions are conducted on the basis of it

So it does look as though, for a while, the D-Mark suffered – and the Swiss franc benefited from – fears that Emu might be achieved quickly but without true convergence. Yet that is not the whole story. Fundamentals were also at work, in particular the differences in the monetary policies being pursued by the Swiss National Bank and the Bundesbank.

The Bundesbank has not been its usual tight-fisted self lately. Not even the likelihood of renewed German economic growth, and its only moderate success in curbing inflation, has prevented it from continuing to lower interest rates.

The Swiss National Bank has not succumbed to laxity, and has come across as the last repository of orthodoxy. Determined to choke off any inflationary pressures generated by the introduction of value added tax, it pursued a relatively tight monetary policy at the start of this year, paying little attention to Switzerland's sluggish economy and modest inflation rate.

When the Swiss franc began to appreciate again, the bank gave the impression that it was following the market, rather than leading it, in moving interest rates down. In Switzerland, the official discount rate is mostly symbolic because no transactions are conducted on the basis of it. But it does act as a reference-point for the market. It was kept almost constantly at a percentage point below the Bundesbank's discount rate, even though Swiss fundamentals and the upward pressure on the franc suggest that it could have been reduced further. Meanwhile, the monetary base – the only indicator the bank officially cares about – stayed below its target level.

The contrast between the unmovable moneymen in Zurich and the unusually pragmatic officials in Frankfurt thus became sharper, enhancing the Swiss franc's appeal.

The Swiss National Bank did finally seem to become aware of the danger and the need to take action: after the Swiss franc took off in mid-September, it lowered its discount rate to 2 per cent, citing currency developments as the reason. That decision was hailed by the markets and was interpreted as a sign that the bank would be more accommodating in future. By a fortunate coincidence, the decision was announced on the same day Mr Waigel tried to talk the D-Mark up. The D-Mark duly recovered a little from a nine-year low of SFr0.799.

But the Swiss franc will not really settle down unless the Swiss National Bank is more open about what its intentions are and is seen to act accordingly. Its day-to-day operations are rather opaque and their immediate effect is hard to assess. It would therefore be no bad thing for the bank to confirm that it intends to clip the Swiss franc's wings rather than continuing to give the impression that its monetary target is the be-all and end-all.

The currency will certainly remain sensitive to the vicissitudes of Emu. But recent policy statements should dispel fears that the Maastricht requirements will be bent. In addition, the decisions at the recent Valencia meeting not to delay Emu beyond 1999 should make for a less emotional and more business-like atmosphere. This is because it has reduced the risk that the weaker currencies might be allowed to join without meeting the Maastricht convergence criteria. Moreover, signs that the German economy is picking up may, by the end of the year, convince the markets that the Bundesbank will clamp down before much longer.

Yet that is no reason for the Swiss National Bank to do nothing but respond to developments elsewhere. If it adopts such an approach, the Swiss franc – along with Swiss interest rates and financial markets – will fluctuate wildly, rising sharply in the immediate future before suffering an abrupt correction when capital flows are eventually reversed.

If, on the other hand, it states clearly what its intentions are, without being too heavy-handed, the currency should settle down. Certainly, the bank cannot ignore the need to tone down what Oscar Wilde called the "melodramatic side" of currencies.

The author is chief investment strategist at Lombard Odier, the Geneva bank.

LETTERS TO THE EDITOR

Number One Southwark Bridge, London SE1 9HL

We are keen to encourage letters from readers around the world. Letters may be faxed to +44 171-873 5938 (please set fax to 'fine'). Translation may be available for letters written in the main international languages.

Russia achieving economic success, despite problems

From Mr Jochen Wermuth.

Sir, With regard to your article "Early declaration of victory" (September 27), it has not been my impression that the Russian government is trying to set off a nuclear war "simply by failing to fund" nuclear submarine bases and "hundreds of state programmes". Problems persist in the flow of funds from the centre to the regions and to sectors of the economy. Also, in real terms federal expenditure has been cut by 35 per cent since 1992, causing social hardship in some cases.

Still, I would consider it a great success that, for the first time this year, the government has been able to execute 100 per cent of federal expenditure as specified by law; any additional expenditure will be agreed on in the state Duma.

Similarly, I think that 1995 has, if anything, been characterised by significant structural reforms, a precondition for macroeconomic stabilisation, and not by "faltering structural reforms". Namely, foreign liberalisation has progressed at a rapid pace with the abolition of centralised trade at the beginning of the year and the reduction of export tariffs at the end of the year, leading to net gross domestic product gains. At the same time, energy prices have increased by more than 40 per cent in real terms, and, thanks to two large tax packages over the course of the year, energy sectors finally have to pay some of their tax bills. Excises were more than doubled over the course of the year to counter lost revenue from export tariffs.

Finally, while privatisation has been slow, this has not been a sign of faltering structural reform , but, on the contrary, a sign of commonsense fiscal policies. The Russian stockmarket is likely to multiply by a factor of three to 10 in real terms before too long, but is likely to remain relatively depressed before the elections. Thus, for the government to sell shares today would not be intelligent. The loans for shares deal, however, in its final version will have private investors working to increase the value of government stakes and could be used in any textbook on incentive theory.

Jochen Wermuth,
head of group, macroeconomic policy department,
economic export group,
Ministry of Finance of the Russian Federation,
Ilyinka 9,
Moscow, Russia

Criticism of forecasters misplaced

From Mr Patrick Foley.

Sir, John Kay ("Cracks in the crystal ball", September 29) makes out economic forecasters to be mindless followers of trends. "Economic forecasters know little of what they are forecasting, so there are worse rules of thumb than expecting that the future will be like the past." He goes on to suggest that there have been important structural changes in the economy which most, or perhaps all, forecasters have failed to see. He, of course, has spotted these changes, which will have "wide-ranging effects on business and finance, and economic analysis can illuminate what they are".

John Kay's criticism is entirely misplaced. It is exactly because of such structural changes that economists and economic forecasters, including, I suspect, his own staff at London Economics, are employed. Their job is to identify such changes and to predict what impact they will have, whether at a macro or micro level. I know of no forecaster who simply follows trends. Indeed, economic forecasting is all about attempting to assess how the future will be different from the past.

Presumably, John Kay is now going to propose, in his capacity as professor of economics at the London Business School, that the institution's Centre for Economic Forecasting should close. As he says, "when someone tells you what inflation will be in the third quarter of next year, or predicts the growth of manufacturing output in 1997, do not listen. He does not know." The LBS forecasts both these things!

Of course, forecasters don't know and most forecasters (with a few well-known exceptions) would not claim to know. Most published forecasts are no more than what the forecaster considers to be the mid-point of a range of values possible under the most likely scenario.

Patrick Foley,
chief economic adviser,
Lloyds Bank,
PO Box 215,
71 Lombard Street,
London EC3P 3BS, UK

Fine export effort

From Mr Michael Rose.

Sir, Your Observer article "Nutty centred" (September 28), regarding the mission to Belgium of small and medium-sized enterprises, would have served "UK Limited" well had it praised the efforts of the delegates involved and recorded their success and determination, rather than resorting to political knocking.

The participating companies were all winners of a competition for places from some 1,500 attendees at recent "Begin in Benelux" seminars organised throughout the UK by industry and government to encourage such companies to enter the exporting arena. We all had the added bonus and privilege of being led by the foreign office minister, Jeremy Hanley.

It was a shining example of industry and government working together as we strive to encourage a further 30,000 companies to export by the turn of the century.

For the record, the trade figures to Belgium last year of £7.7bn showed a year on year increase of some 9.6 per cent. The latest figures for 1995 show a continued improvement and the nation has a positive trade balance. The Benelux countries are now Britain's second-largest trade outlet.

Michael Rose,
chairman, Begin in Benelux Campaign,
Department of Trade and Industry,
Kingsgate House,
66-74 Victoria Street,
London SW1E 6SW, UK

Prudent criteria for participation in Emu

From Mr Richard Benzie.

Sir, Recently reported remarks by the German finance minister, Mr Theo Waigel, on the ineligibility of Italy and Belgium for monetary union have created a stir (Letters, September 28). Nevertheless, they may yet have a benign impact if they encourage a re-examination of the fiscal policy criteria contained in the Maastricht treaty.

The problem is the debt criterion, which should be scrapped. It would, for example, preclude Japan from participating in monetary union, were it a member of the EU. Since Japan has enjoyed the lowest average inflation rate of any OECD country over the last 10 years, this seems absurd.

As a quid pro quo for putting the debt issue to one side, Germany would be wise to insist on a tightening of the budget deficit criterion. Prior to the exceptional demands of reunification, the German government recorded an average budget deficit of 2 per cent of gross domestic product over the period 1981-1990.

Proponents of monetary union have argued that a common currency will allow other EU members to experience German levels of inflation. It is consistent with such claims to require governments in the common currency area to have kept their average budget deficits below 2 per cent of GDP over the some recent prescribed period.

The elegance of the budget deficit criterion is that it sensibly blocks the participation in monetary union of two types of government: those with large debt service payments (on account of their high inflation rates) and those with non-interest expenditures exceeding revenues by a large margin. It is precisely these two groups for which a transition period outside the single currency zone is appropriate.

It is surely right that the criteria for participation in European monetary union should concentrate on the prudence of recent policies, rather than the sins and omissions of the more distant past.

Richard Benzie,
Flat 5,
167 Mornington Road,
London E11 3EA, UK

Monnet money – an appropriate tribute

From Mr Romano Subiotto.

Sir, Lionel Barber reports from Valencia ("EU on course for currency plan", October 2) that the European currency may be called the "Euro". I would invite our leaders to consider calling it the "Monnet" after Jean. This would be an appropriate tribute to Jean Monnet, deal with German objections to the Ecu, preserve Gallic pride, and be phonetically more meaningful than the "Euro", since citizens are likely to be happier with a lot of Monnet. A note of caution, however, since a Monnet could be taken to mean "small monkey" in Valencian, depending on the pronunciation.

Romano Subiotto,
131, rue des Confedefes,
B-1040 Brussels, Belgium

FINANCIAL TIMES

Number One Southwark Bridge, London SE1 9HL
Tel: +44 171-873 3000 Telex: 922186 Fax: +44 171-407 5700

Tuesday October 3 1995

Laws made in secret

Mr David Martin, the MEP for Lothian, once said that if the European Community applied for membership of itself it would be rejected, on the grounds that it is not a democracy.

Since he made the remark, the European Union has come into existence. But that has done nothing to improve matters. The quasi-federal community is now flanked by two intergovernmental "pillars" in which ministers take decisions with even less semblance of parliamentary control.

But at least those decisions are not legislative acts. Any legislation they may lead to has to be enacted by the parliaments of the member states. In the community, by contrast, laws are made which the member states are bound to enforce; and they are made by the Council of Ministers, with the elected European parliament playing only a subsidiary role.

The council is, in other words, a legislature, whose members are not elected but delegated by national governments. That puts them at two removes from the electorate. Not content with that, they debate and enact laws in private – something no legislature in any democratic country presumes to do.

Not until the Danish vote against Maastricht 1992 did the council begin to admit the need for greater transparency. The Edinburgh summit at the end of that year promised more open government, and the Danish presidency which followed allowed television cameras into the council for the first time. Only for part of the proceedings, however, and even that requires a unanimous vote on each occasion.

Last year, in reply to a request from this newspaper, the council graciously agreed to arrange for the votes of its members to be recorded and "periodically published". But it refused a request from The Guardian newspaper for disclosure of its minutes, and is still fighting the issue in the Court of Justice.

Meanwhile, it is embroiled in an argument with the parliament, and has several times been criticised by the court, for making secret amendments or exceptions to the laws it passes. This practice violates the fundamental legal principle that the content of law must be fully public – the necessary counterpart of the rule that ignorance of the law is no excuse. Yet the "code of conduct" adopted by the council yesterday, which purports to end this abuse, still allows it to exempt itself in certain cases from the obligation to make such amendments public.

The trouble is that the council is composed of ministers, who are used to functioning as an executive and therefore feel the need for confidentiality. Its very name suggests an executive rather than a legislature. This point should be clarified by next year's intergovernmental conference. As a French minister suggested last year, the legislative and executive functions of the council should be separated, and the former should be exercised at special sessions held in public, with a fixed agenda published in advance.

Nigeria's plight

General Sani Abacha, Nigeria's military leader, has missed an opportunity. Instead of taking advantage of his long-awaited national day speech to outline a fresh start, he has done no more than expediency required. Next month's Commonwealth conference in New Zealand gives the opportunity to persuade him to do much more, and help him do it.

While welcome, Gen Abacha's decision to grant clemency to alleged coup plotters sentenced to death was the least he had to do in the face of pressure from world leaders. He also commuted the life sentences imposed on Nigeria's former leader, retired General Olusegun Obasanjo, and on a number of others.

Those sentences will almost certainly expire when Abacha's reign ends. If the general keeps his promise this will be three years' hence, the date he announced on Sunday for the handover to civilian rule. This is twice as long as an orderly return to democracy requires. It is also far too long to leave Nigeria in charge of a regime whose economic policy is incompetent and confused. Nothing illustrates this better than its belief that it can renationalise its commercial banks, while at the same time seeking an agreement with the IMF.

The Commonwealth conference, barely a month away, is an excellent opportunity to make it clear to the Nigerian leader that what he has announced is far from enough. The opening item on its agenda for Nigeria should be to call on Gen Abacha to reduce the transition to democracy to a period of no more than 18 months. He should invite the Commonwealth to monitor the election process from the start. General Abacha must also release the winner of the aborted 1993 presidential election, Chief Moshood Abiola.

In return, the Commonwealth can help persuade Nigeria's creditors to take a radical approach to the country's unmanageable external debt burden. This would involve them making an offer of sizeable relief and long-term rescheduling – conditional on economic reform and maintaining the new election timetable.

Finally, if the army is to support the transition, a demobilisation fund should be established. This would be financed by the oil receipts that are currently improperly diverted to the pockets of the military. The fund would be used to help reduce the size of the army through retraining schemes and redundancy payments for ordinary soldiers. It would also provide golden handshakes to senior officers who might otherwise sabotage an orderly handover, because they see their chance of enrichment threatened by civilian rule.

Given the complexity and frustration of dealing with Nigeria, it may be tempting for concerned governments to relax pressure on the regime, because of General Abacha's partial concessions. This would be wrong. While Nigeria may now drop from the headlines, the potential for disaster is as great as ever.

Labour's jobs

The youth employment package unveiled in Brighton yesterday by Mr Gordon Brown, the shadow chancellor, has one important advantage over many previous Labour jobs schemes. Like it or not, the funding for the proposal – through a one-off levy on privatised industries – is crystal clear.

Mr Brown will doubtless spend a good part of the time between now and the election arguing the rights and wrongs of such a tax. But he had a different case to make in yesterday's speech: namely that if an incoming labour government is indeed going to receive a £2.5-3bn "windfall", his employment proposals are the best way to spend it.

In general terms, it is difficult to dispute the notion that high unemployment rates, much of it quite long-term, among under-25 year-olds carry grave consequences – not merely for the individuals themselves, but for the country as a whole.

International experience suggests that people who fall off the educational and employment conveyor belt early in life often spend the rest of their careers paying for it, in lower earnings, and chequered job histories. Their lack of experience and valuable skills helps make the labour market less flexible and more prone to inflation. Also, given that the vast majority of criminal offences are committed by under-25 year olds, it is a fair guess that their idleness imposes this cost, too, on society.

Mr Brown's priorities are sensible. In practice, these translate into a commitment to providing a wider range of options for those young people who have been unemployed for over six months. But there are difficulties. For example, the £60 per week employers' rebate is likely to have sizeable substitution effects, since companies will favour six-month unemployed workers over those who have just left school, and they may well sack people employed under the scheme when the rebate runs out, six months later.

Any subsidy scheme is certain to have knock-on effects of this kind. To claim that one group deserves particular policy attention is to claim that the benefits to the participants will outweigh the costs. But Mr Brown may need to provide more details to convince sceptics that all of his proposals meet this test, particularly the proposed state-run "environment" taskforce, which will need to be well-managed if it is to provide participants with useful experience.

In outline, though, the Labour party scheme seems to strike a sensible balance between a US-style "sink or swim" approach to young workers and the vigorous state paternalism of many continental European systems. Offering quasi-public sector work as an alternative to either private sector employment or full-time education is a gamble, since such programmes tend to be costly and prone to abuse. The evidence suggests, however, that it may be a gamble worth taking.

The east German economy is recovering after unification – and teaching the west how to be flexible, says Peter Norman

Sweet and sour experience

Five years after reunification, Germany has some reason to feel pleased with itself. The assimilation of the bankrupt, former communist east Germany is making progress.

Living standards in the east are catching up with those in the west. Investment, especially in infrastructure, has been strong. In spite of huge financial transfers to the east, Germany as a whole has managed the transformation with its currency intact and inflation low.

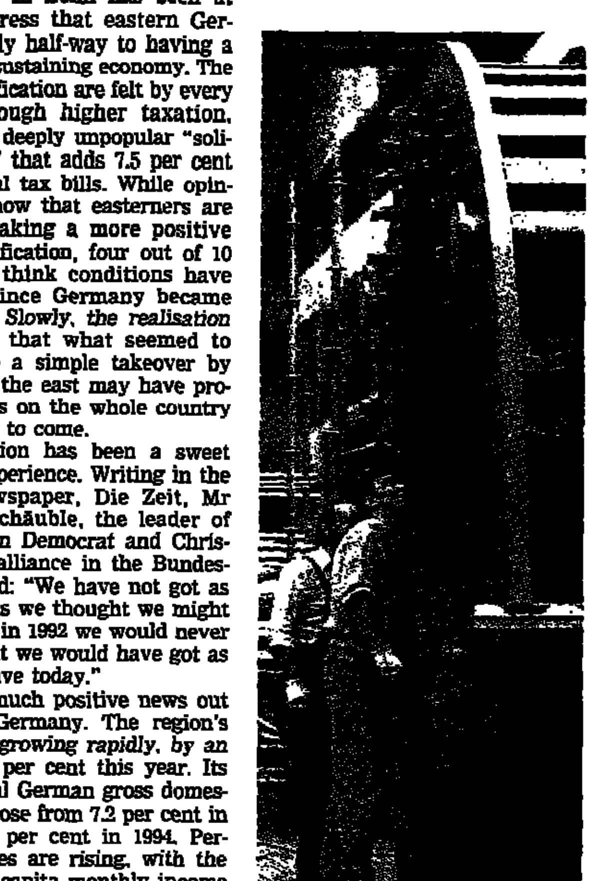
But Germany would not be Germany if today's fifth anniversary of unification were not also a cause for sober reflection and anxiety. The government in Bonn has been at pains to stress that eastern Germany is only half-way to having a viable, self-sustaining economy. The costs of unification are felt by every citizen through higher taxation, including a deeply unpopular "solidarity levy" that adds 7.5 per cent to individual tax bills. While opinion polls show that easterners are gradually taking a more positive view of unification, four out of 10 westerners think conditions have worsened since Germany became one nation. Slowly, the realisation is dawning that what seemed to many to be a simple takeover by the west of the east may have profound effects on the whole country in the years to come.

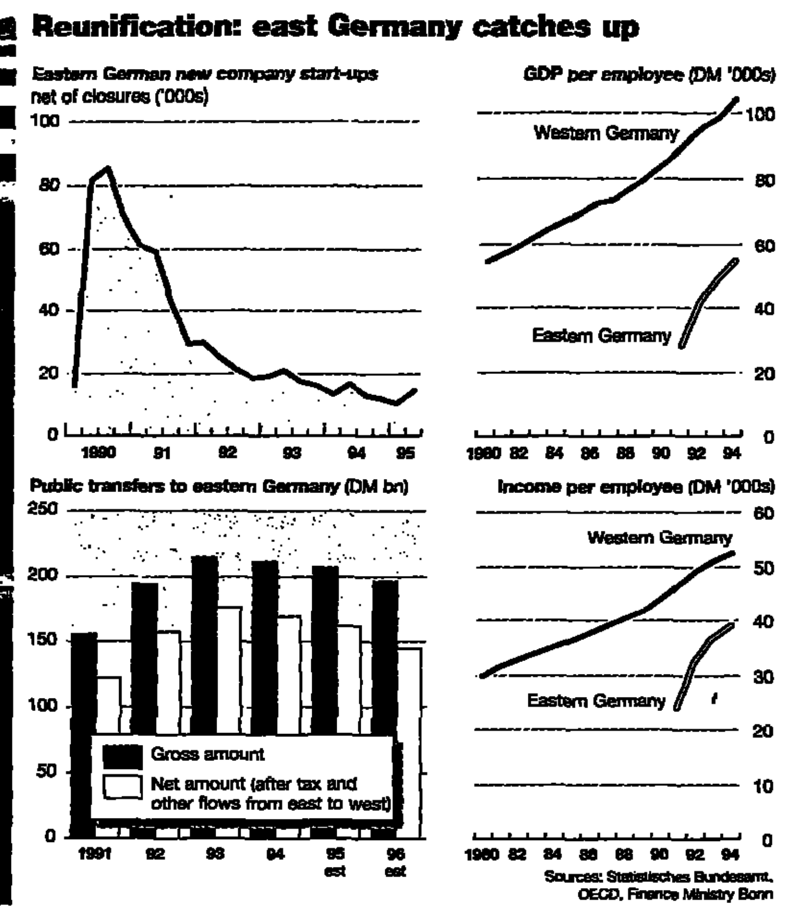
Reunification has been a sweet and sour experience. Writing in the weekly newspaper, Die Zeit, Mr Wolfgang Schäuble, the leader of the Christian Democrat and Christian Social alliance in the Bundestag, observed: "We have not got as far in 1995 as we thought we might in 1990. But in 1992 we would never have thought we would have got as far as we have today."

There is much positive news out of eastern Germany. The region's economy is growing rapidly, by an estimated 8 per cent this year. Its share of total German gross domestic product rose from 7.2 per cent in 1991 to 10.4 per cent in 1994. Personal incomes are rising, with the average per capita monthly income now more than 70 per cent of the western level against 49 per cent in 1991.

Industrial production is growing, albeit from a low level: output was up by about a fifth last year. Eastern Germany is acquiring a modern economic infrastructure. Spending on transport has totalled DM55bn ($38.73), about half Germany's entire transport budget since unification. Deutsche Telekom has spent DM40bn installing 4.2m new phone lines, creating in the process a phone system that is far better than that in the west, and plans to spend a further DM20bn by 1997.

But such progress has been costly and only possible through big transfers of money from the west which are expected to continue for years. Although the transfers appear to have peaked in 1993, they are still forecast at a gross DM207.6bn this year and DM196.5bn in 1996. Such figures help explain why Germany's overall public-sector debt will reach DM2,015bn this year, nearly double the DM1.048bn of 1990.





Eastern Germany's core problem is that it does not produce sufficient goods or services to meet the needs of its people. Domestic demand in the new Länder exceeded production by DM219bn last year. The region's industrial base is too narrow. Just 6.7 per cent of east Germans are employed in manufacturing against 12 per cent of west Germans.

Productivity, although rising, is still low. By last year, GDP per worker was 53 per cent of the western German level, up from 31 per cent in 1991.

It is true that investment has grown strongly, with spending on plant and equipment up from DM34.4bn in the second half of 1990 to nearly DM180bn last year. But nearly two thirds of the total has been spent on buildings. The Berlin-based DIW economic research institute has estimated that eastern Germany has only about 10 per cent of total German capital stock, whereas its size would justify a share of about 20 per cent. It could take another 10 years for capital stock and labour productivity to catch up with the west.

There are other handicaps. Eastern German companies are weakly capitalised. Profits are low: a recent DIW report suggested that only 14 per cent of eastern businesses made a profit last year. Unlike western companies, eastern businesses have no hidden reserves. They also have fewer management skills. Liquidity difficulties, which in the west would be overcome, hit hard and quickly and often with a domino effect among weakly capitalised suppliers.

There are growing fears that a wave of bankruptcies will hit eastern Germany. Mr Lothar Späth, a former prime minister of the western German state of Baden Württemberg and now chief executive of Jenoptik GmbH, an east German optical group, has warned that "about a half of eastern German manufacturing companies are in acute danger".

The weakness of eastern German companies has been especially striking in export markets where the new Länder accounted for only 1.8 per cent of total German exports in 1994.

These problems are crystallised in continuing high unemployment. The region's unemployment rate was 13.9 per cent in August against 8.2 per cent in the west. Nearly two thirds of those out of work are women.

And yet, because productivity growth has lagged behind the growth of wages, eastern unit labour costs are about 37 per cent higher than in the west. The unemployed in the east are paying dearly for the German trade unions' policy of transferring western wages and other conditions to the new Länder as rapidly as possible.

Eastern Germany will continue to depend on taxpayers' support for some years to come. Although the government would love to get rid of the solidarity levy, a phased abolition is unlikely to start before 1998.

Inevitably, the mixed record since unification is prompting second thoughts as to whether opportunities have been missed and if things could not be managed better in the future.

Some, like Mr Späth, now regret that the takeover of east was not used to introduce reforms that could have served as a model for western Germany.

Mr Georg Milbradt, another westerner, who is finance minister of the east German Land of Saxony, has complained that what was in effect a takeover of the east by western Germany led to the adoption of western German practices and attitudes which were insufficiently dynamic for a society going through a fundamental change. In particular, he argues that the imposition of west German-style wages was the main reason why 3.5m people lost their jobs in the east between 1989 and 1993.

In this important area, however, eastern German companies are taking the initiative to break with western practices. Local employers are increasingly cutting deals with trade unions or taking unilateral action to undercut the costly labour wage settlements agreed at a national level.

A worried Mr Dieter Schulte, head of the German Trade Union Federation, warned last week that developments in eastern Germany threatened to "hollow out" Germany's system of collective wage bargaining and wage setting. He cited survey evidence which suggested that only one third of companies belonged to employers' associations and were thus obliged to implement collective agreements. Of the other two thirds, half paid wages that undercut the agreements. Moreover, even some companies that did belong to employers' associations were ignoring the agreements and paying lower wages.

Eastern Germany's labour market practices could be an early sign of how unification is destined to bring change to Germany as a whole. Mr Milbradt certainly hopes it will. Unification, he says, should be treated as a welcome chance for reform.

"We must change the western German model," he says. "Then, despite all the errors and burdens, the process of unification could lead to an increase in the flexibility of the entire German economy."

Scent of self-confidence

Judy Dempsey finds a new optimism in the east

Cottbus, a small town in the east German state of Brandenburg, has been transformed in the past five years. Until 1990, it was a shabby place where you could smell and feel the gritty brown coal from the neighbouring Laubag open cast mines. Those smells have almost gone because of closures and the introduction of new technology. So have the jobs. The mines used to employ more than 55,000 people. Today, no more than 12,000 people work at Laubag.

As one smell has faded, another has taken its place: flowers. The new public gardens in Cottbus have attracted hundreds of thousands of visitors since they were opened earlier this year.

"When I visited the gardens last week, I could see young mothers pushing small prams in the autumn sun, and pregnant women," says one east German mother of three. "It was a very reassuring sight."

Reassuring, because for the first time since German reunification, the birth rate in east Germany has stopped falling. In 1993, eastern Germany had fewer than 5.1 births per thousand people – 60 per cent fewer than in the same period of 1989 and half the rate in western Germany. The fall was the largest ever in the industrial world – the only comparable one was in Berlin between 1942 and 1946.

But then the birthrate climbed between October 1994 and April 1995, indicating that east Germans may not only be coming to terms with unification but beginning to have faith in the future.

"I want to have another child now," says Ms Gaby Schröter, a 30-year-old east Berliner. Her first child was born in 1989. Trained as a teacher, she has been unemployed since 1992 and receives DM1,200 ($843) a month in unemployment benefit. But her husband has a job. "We can manage financially. I also think we are slowly coping with the huge traumatic changes which have taken place in our lives since 1990. I suppose you can say we are adapting."

Unemployment in the east remains high, but east Germans are saving and accumulating financial assets at a rate which has surprised even the Bundesbank.

In its May report, the Bundesbank noted that "the financial assets of residents in the New Länder have nearly doubled since monetary union became effective and now correspond approximately to conditions in western Germany around the middle of the 1970s". In east Germany, each household last year had financial assets of DM40,000 compared with DM137,000 in the west. East Germans saved 11.9 per cent of their disposable income, not much less than the 12.7 per cent figure for west Germans.

"My friends are even beginning to build or buy houses," says Mr Rainer Manthei, an east Berliner who owns his own office cleaning business. Mr Manthei recently bought a plot of land outside Berlin and spends his spare time building his new home.

"We can now plan for the future. We are putting money aside. We have an idea where we are going," he says. Benjamin, his third child, was born last April, the first birth in the family since unification.

East Germans are not just having more children and saving more of their earnings. They are also changing their spending habits, after indulging in a consumer spending spree in 1990 and 1991 following the exchange of their Ost Marks for D-Marks. The craving for west German goods has given way to a sense of confidence in their own products – of which they were so ashamed in the aftermath of unification.

Ulrich, the local supermarket chain which has an outlet in Mitte, the heart of east Berlin, displays more east German cigarette and dairy brands than west German products. Local food producers report that their share of the east German market has risen to 40 per cent from 30 per cent in 1991.

"Of course some east German products are cheaper," says Mr Horst Dieckmann, a sales assistant in one of the Mitte's local Tabaks, outlets which sell newspapers and cigarettes. "But that is only part of the reason. I think east Germans now feel their products are just as good as the west German ones. I think we feel more confident about unification. Less inferior to the Wessis."

OBSERVER

Nuclear option

■ First prize, France. Second prize, the world. It seems almost too Gallic to be true, but a new book published yesterday describes how, a year or so ago, aides to the former French prime minister Edouard Balladur were wracking their brains for a carrot to persuade Jacques Chirac to drop out of the presidential race.

Aha, they thought – as Bernard Brigouleix, then Balladur's press secretary, reveals in his book – what better pick-me-up for failing to secure the Elysée than the secretary-generalship of the United Nations? Hence advisers to Balladur, who was riding high early in the campaign, came to discuss the notion of promising to promote Chirac as a successor to Boutros Boutros-Ghali.

Of course, Balladur lost to Chirac, not the other way around, which is perhaps just as well.

Considering that the impulsive Chirac has managed to alienate much of the world within the first five months of his presidency, just think what he could have achieved at the UN.

End of the line

■ The glaciers of Iceland must have juddered to a halt in their tortuous progress to the sea yesterday when Mrs Vigdis Finnbogadottir surprised the country's 1065-year-old Alting – or parliament – by declaring she would not be standing for another term as president in next year's elections. The ever-popular president has won four terms of office – twice uncontested – since she was elected as the world's first woman head of state in 1980. Since then, she has come to symbolise paradoxical Iceland, a far-flung but highly progressive outpost where volcanic hot springs bubble in the shadow of great glaciers. Despite her youthful looks, Mrs Finnbogadottir has evidently decided that at 65 it is time to step down from the cares of office.

Duck netted

■ Well, well. Perot Systems, the Dallas computer consulting group founded by Texas billionaire Ross Perot, has brought James Cannavino, IBM's former chief strategist, out of retirement, and signed him up as its president and chief operating officer.

Nicknamed "wild duck", Cannavino was once viewed as a potential future chairman of Big Blue, but Lou Gerstner dashed his hopes on arrival in April 1993.

Refusing to sign a "non compete" agreement – and thus foregoing millions of IBM share options – 51-year-old Cannavino took his leave in March after 32 years with the company. Yesterday he said that he had decided he had been "retired for long enough".

"A flea with global ambitions", as its boss Morton Meyerson yesterday styled it, Perot Systems has yet to live up to its promise. But last month, it signed an important deal with Swiss Bank Corporation. That, together with Cannavino's arrival, certainly helps it along the way to a public stock offering. Cannavino could then recoup some of those millions he left on the table at IBM – and Ross Perot, who owns 20 per cent of Perot Systems, would do quite nicely, too, thank you.

Cobbled together

■ As Jean Saint-Geours comes to the end of his six-year stint as chairman of the Commission des Opérations de Bourse, the French markets watchdog, the battle to appoint his successor seems to be about almost anything but securities regulation.

Jean Arthuis, the bean-counter turned minister of economics and finance, is keen to promote his own directeur de cabinet, Jean Lemierre. This, however, seems to have little to do with any high regard for Lemierre, inherited from his outspoken, and now sacked, predecessor Alain Madelin. No, Arthuis is determined to show that he is his own man, and giving the COB position to his directeur de cabinet – with whom he does not see eye to eye – would be a useful early marker.

Word has it that he could be pipped at the post by Michel Prada, now head of the state-backed specialist development bank Crédit d'Equipement des Petits et Moyens Enterprises.

Prada's card is that the powers that be seem to want an elegant way of extricating him from an institution with its share of financial difficulties.

Time for a regulator of regulatory appointments?

Bomb shell

■ How times change. It is 75 years almost to the month ago since someone tried to blow up the Wall Street headquarters of J.P. Morgan & Co. The House of Morgan, which was even more powerful then that it is today, survived intact but more than 40 people died in the explosion.

The immediate assumption was that it was the work of the Bolsheviks who wanted to strike a blow at the best-known pillar of capitalism. The US Justice Department started searching for five anarchists, all with Italian names. In the end no one was found guilty and the question of who planted the bomb remains a mystery to this day.

Now a US federal jury has convicted 10 Moslem radicals – including a blind cleric – of plotting to blow up several New York landmarks in 1993. Let's hope they convicted the right guys.

The Financial Times

100 years ago

The Sequel to Sequah

Five years ago – to be precise in June 1890 – the guileless and trusting British investor was asked to subscribe the sum of £200,000 towards the acquisition of the business of Sequah Limited. The prospectus was framed along the most glowing lines, and seemed to open up to subscribers a prospect of almost illimitable returns.

Chemists' testimonials were appended to the prospectus by the score, to prove the immense demand that existed for Prairie Flower and Sequah Oil, which were declared to be specifics for indigestion and liver complaint.

The system of advertising, which was by the cheap method of Cheap Jacks, who toured the country on waggons and descanted eloquently upon the merits of these admirable remedies, was eulogised.

So much for promises, now for performances; and seldom has there been a greater contrast between picturesque imagination and bleak reality. From the commencement of the company's operations, the profits on the Prairie Flower appeared to wither up, and the number of people who lubricated themselves with Sequah's Oil to fall off lamentably.

FINANCIAL TIMES
Tuesday October 3 1995

Tough reforms must be continued, warns report

Russian economy set for growth, says OECD

By Chrystia Freeland in Moscow

The Russian economy could grow by up to 10 per cent next year if the government continued to implement tough market reforms, the Organisation for *Economic Co-operation and* Development concludes in its first survey of the country.

In the report published yesterday, the Paris-based OECD forecasts that Russia's economic output, which declined by 15 per cent last year, could stabilise this year and grow by as much as 10 per cent in 1996. It also praises the government for its privatisation programme and for encouraging a flexible labour market.

But the OECD warns that Russia's progress depends on continued government commitment to liberalisation and tough fiscal policies. If the government *falters*, possibly distracted by the temptation of appeasing voters *before parliamentary elections in* December, output could fall again next year, says the OECD.

The report highlights the role which the International Monetary Fund has played in Russia's reform process. In frank language, it points out that Russian leaders have "put the international financial institutions in a difficult position" by building foreign financial assistance into this year's budget long before a deal was achieved with the IMF.

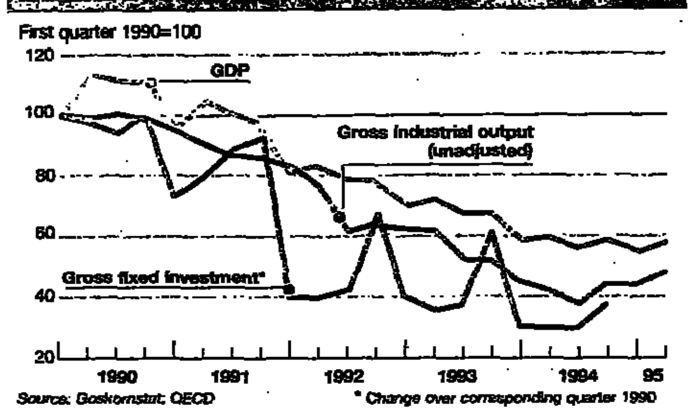
The OECD says this approach locked IMF officials into an awkward position in which "what might be justified hesitation on *their part [could be] portrayed* as a cause of the fragility of [Russia's] macroeconomic position."

It notes the IMF's monthly monitoring of Russia's economic performance this year, which it describes as an "unprecedented" measure, and one which had helped keep Moscow's spending under control.

But the report's authors say that, because of a reluctance to reveal economic data to outsiders and even to other branches of the government, gathering information about Russia was "significantly more difficult" than for other OECD surveys. In a sign of caution, the OECD also insists that in Russia "the process of transformation is *far from* complete and its destination remains unclear". One problem identified is the failure of the privatisation *programme to lead to comprehensive* reform of corporate governance. It also urges the government to continue with price liberalisation.

Although the report is focused on the economy, it devotes considerable attention to the political issues which have often acted as a brake on economic change. It criticises the haphazard nature of political decision making in Moscow and warns that provinces often ignore central decisions.

Russia: growth, output and investment



Source: Goskomstat; OECD
* Change over corresponding quarter 1990

Phoenix telecoms alliance ready in January

By Alan Cane in Geneva and *Caroline Southey in Brussels*

Phoenix, one of the three large *international alliances bidding to* become global "telecoms supercarriers", will open for business on January 1, its senior executives claimed yesterday.

The Phoenix alliance involves Sprint, the third largest US long-distance carrier, and Atlas, a joint venture between Deutsche Telecom and France Télécom.

At the Telecom '95 telecoms exhibition in Geneva, Mr Chris Rooney, president of Sprint International, said yesterday: "We expect Phoenix to be approved at the December 7 meeting of the US Federal Communications Commission and we expect to be in business from January 1 1996."

The claim surprised the *alliance's main competitors* – AT&T and MCI, the largest and second largest US long-distance carriers, and British Telecom of the UK – because neither Atlas nor Phoenix have regulatory approval from the FCC or from the European competition authorities in Brussels.

AT&T is currently seeking approval for its own venture called "World Partners". BT and MCI have approval on both sides of the Atlantic for a venture called Concert. The US and British telecoms companies, both operating in fully liberalised *markets, are trying to block the* Phoenix alliance, alleging they are not allowed the same access in Germany.

The statement also conflicted with an earlier announcement from the European Commission that it may have to delay its plans for the liberalisation of alternative telecoms networks.

A draft directive requiring *member states to allow alternative* networks, such as those run by railways and utilities, to be used for the provision of all services by January 1 has been awaited. Mr Karel Van Miert, EU competition commissioner, has pressed for concessions from France and Germany, which wants a later date for liberalisation. In return, he has indicated *he might give consent to Atlas.*

"The Commission's first date was for January 1, 1996. But this *might be unrealistic as a meeting* of telecommunications ministers has been scheduled for the end of November," an EU offical said.

The Commission, however, confirmed it had been supplied with the additional information on the Phoenix deal which it had sought by a September 28 deadline.

Phoenix and Atlas aim to compete for the lucrative telecoms *business of large international* companies to which they will offer a one-stop service. They *have so far failed to* win approval from the regulators because the French and German telecoms markets are closed to foreign competition and will not be liberalised until January 1 1998.

THE LEX COLUMN

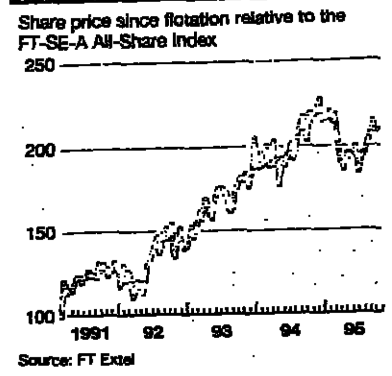
Postal strike

The Deutsche Post-led hostile bid for Germany's Postbank is a bit like the consolidation of the UK's electricity sector happening before the companies were even privatised. Not only is it bizarre but it raises serious concerns over government handling of the privatisation of the former Deutsche *Bundespost, since the structure* has started to be dictated by outside parties.

The strategy behind the bidding consortium is clear. Deutsche Post is struggling as a result of falling contributions from a *newly-separated* Postbank. And its management must be concerned about its ability to achieve privatisation as a pure postal business, given the British government's recent difficulties. Its main partner, Deutsche Bank, could use the deal to spur consolidation within Germany's sprawling banking sector. However, it appears more interested in expanding the range of services available to Postbank clients – and presumably making a large profit on the investment when Postbank is eventually floated.

The more puzzling question is why the government should consider the consortium's offer. It is offering only *half the valuation put forward* by Postbank's advisers, despite the fact that there are plenty of other potential buyers. *The deal would make Deutsche* Post a more saleable item, but it would still be a tougher flotation prospect than a separate Postbank. The government clearly needs time to rethink its strategy for the Bundespost. If it accepts this offer now, it will be selling German taxpayers short.

National Power



Share price since flotation relative to the FT-SE-A All-Share Index
Source: FT Extel

French banking

Crédit Lyonnais's criticism of French mutual banks for making uneconomic loans is a classic case of *the pot calling the kettle black. After* all, the state-controlled bank was so reckless in its lending that the government had to mount a FFr135bn rescue operation earlier this year. But an equally appropriate aphorism for Mr Jean Peyrelevade's remarks is: it takes one to know one. The Crédit Lyonnais boss has pinpointed a problem that faces mutuals not only in France but throughout much of Europe. Because *they are not adequately accountable* and do not pay dividends, mutuals have little incentive to behave *commercially. If that leads* to uneconomic lending, the rest of the banking sector suffers too.

Mr Peyrelevade's remedy is for the banking regulator to force banks that make uneconomic loans to take bigger provisions. The idea has some merit: if mutuals had to take a charge upfront when they were lending unprofitably rather than waiting until the effects of their folly became apparent, they might be deterred from making those loans in the first place. The suggestion's main weakness is that it places great faith in the regulator's commercial judgment. A better solution would be to convert the mutuals into *shareholder-owned banks, which would* then be subject to the canons of the market. That may not look practical politics in France today. *But if depositors* received free shares on conversion – as members of Britain's building societies have – views could swiftly change.

National Power

National Power's denial that its £2.8bn takeover of Southern Electric is a defensive move rings hollow. The *generator is facing real threats to its* market share in 1998, when electricity companies will no longer be tied to long-term contracts at high prices. Furthermore, it is giving up market share through the sale of 4,000MW of generating plant as required by the regulator. Access to domestic customers will be crucial in the newly-competitive market.

National Power was clearly *outflanked by PowerGen's offer for* Midlands Electricity. The acquisition of Southern now puts it on an equal *footing. And it also solves* more immediate problems. The plant disposal would have taken a large chunk out of earnings. But the Southern acquisition, at the very least, will make up for that. Finally, the deal reveals much about National Power's much trumpeted ambitions overseas. Had expansion been so easy, the company would surely have invested the money abroad where returns are much higher than in the UK. Instead, it has opted for a route which will restrict its ability to make international acquisitions.

Such factors should not detract from what appears to be a sensible acquisition at a fair price. However, questions over National Power's motives may finally affect both its and PowerGen's shares. The deal has drawn attention to the pressures on both companies, both short and long-term. After years of outperformance, the generators may now be due for a derating.

Special dividends

The feeding frenzy in the UK *electricity sector has produced a new* use for special dividends. The manoeuvre involves the bidding company's raiding its target's *balance* sheet to pay special dividends to finance part of the acquisition. The beauty of the scheme is that tax-exempt shareholders, mainly institutions, are able to reclaim the advance corporation tax (ACT) that is deducted before such dividends are paid out. In National Power's bid for Southern Electric, the special dividend of 185p is worth 231p to such investors. If half of Southern's *shareholders are tax-exempt*, the Inland Revenue will in effect be contributing more than £60m to the cost of the bid.

This takeover wheeze has apparently been used only in electricity bids, but it could have applications beyond the sector. It will not work when the target is paying out more ACT than mainstream corporation tax, because a special dividend will *simply increase the target's tax bill.* Nor will the scheme work if the bidder is paying out more ACT than mainstream corporation tax, as it will want to use the target's capacity to pay more ACT to cover the tax payments on dividends to its own shareholders. But where both bidder and target are paying more corporation tax than ACT, paying special dividends is a smart way to woo the institutions *which often determine* takeover bids. Whether small tax-paying investors, who cannot reclaim the ACT, fare so *well is another matter. The danger* is that they could be offered rather less than their shares are worth.

Lex comment on First Choice, Page 21

EU divisions

Continued from Page 1

US, which have suffered from trade disputes such as the EU banana regime and more fundamental divisions over EU policy toward Bosnia.

"This relationship is too *important to discuss narrowly,*" said Mr Kinkel. "Trade liberalisation must stay in the action *plan as must the proposed study* of the free trade area."

Mr Hervé De Charette, French foreign minister, said the time was not ripe for discussions on further tariff liberalisation or the proposed study of a free trade area.

Hanson

Continued from Page 1

compared with 34 per cent in the year to March 1995 and 46 per cent at privatisation. PowerGen's share is set to fall from 23 per cent to 19 per cent.

Because National Power is retaining the liabilities for *decommissioning the plants*, Hanson would not have to put the acquisition debt on its balance sheet which has been weakened by the purchase of Eastern. The payment will be split between an initial sum and further payments related to the level of output at the plants.

Mitsui turbine link with GEC Alsthom

By Gerard Baker in Tokyo and John Ridding in Paris

Mitsui Engineering and Shipbuilding of Japan yesterday formed a new alliance with GEC *Alsthom, the Anglo-French* company, aimed at increasing their share of contracts for power generation in the rapidly expanding east Asian market.

The two companies signed a technology licensing contract which highlights Mitsui's ambitions to expand its influence in power generation following its purchase last month of a *majority stake in the energy division of* Babcock International, the British boiler and turbine maker.

GEC Alsthom, the power, transport and engineering group jointly owned by Alcatel Alsthom of France and General Electric Company of the UK, hopes that the Mitsui connection will strengthen its presence in Japan and other Asian countries.

Under the 10-year contract, Mitsui will use GEC Alsthom's technology to manufacture steam turbines with an output capacity of 150MW or less, while GEC Alsthom will be able to expand its medium-sized turbines business in Japan and Asia.

The deal with Mitsui was viewed by industry observers as a significant alliance which would raise GEC Alsthom's presence in *medium-sized* power stations. "This is an important section of the market where it is *useful to* have entrenched partners," said one engineering analyst. "The business and technical record of Mitsui will complement GEC Alsthom's already strong presence in the region," GEC Alsthom said yesterday.

Steam turbines account for about one-quarter of activity in GEC Alsthom's power generation business, the group's largest *division with sales of Ecu4.04bn* ($5.13bn) last year. They are regarded as a particularly important area of the market, because they often lead to contracts for power stations.

Some of the group's biggest contracts have come from power generation in Asia, particularly in China. Earlier this year, GEC Alsthom was selected to supply *two 1,000MW steam turbines*, generators and related equipment for a nuclear station at Ling'Au, *in the province of Guangdong*. It also supplied the turbines and other conventional equipment for the 2,000MW nuclear station at the nearby Daya Bay complex which was inaugurated last year.

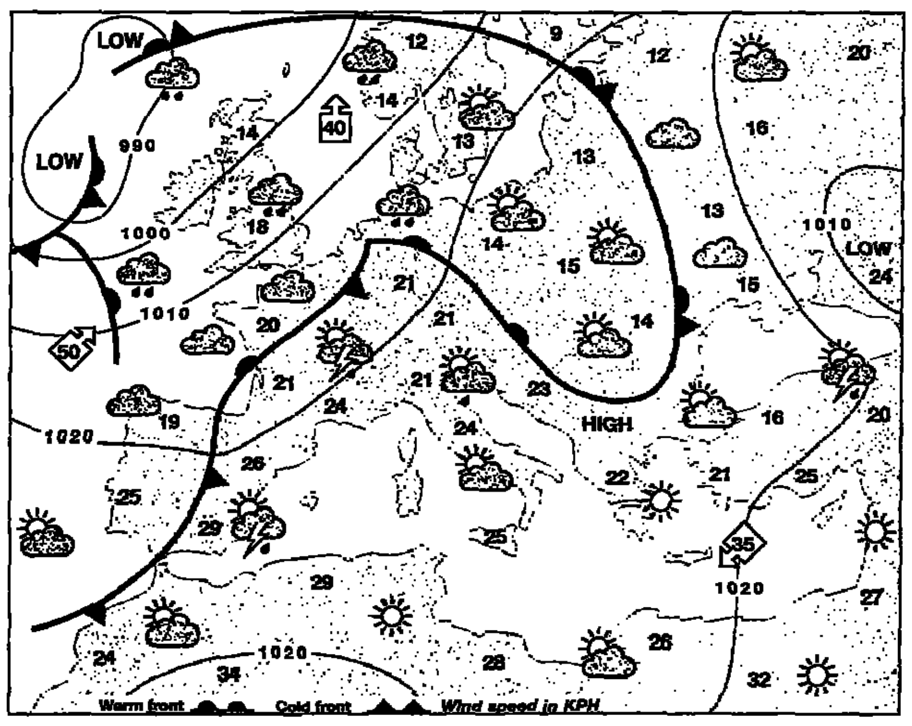
FT WEATHER GUIDE

Europe today

A high pressure system will strengthen over central and south-east Europe as a strong low pressure system develops west of Ireland. As a result, southerly to south-westerly winds will bring warm and moist air to western Europe. The Benelux and France will have showers and thunder is possible. Rain can be expected over western parts of the British Isles as an active frontal zone sweeps in from the Atlantic. Italy, Greece, the Balkans and much of Turkey will be dry with sunny periods. Over European Russia, an active front will cause outbreaks of rain. Scandinavia will be partly cloudy with rain only over western Norway.

Five-day forecast

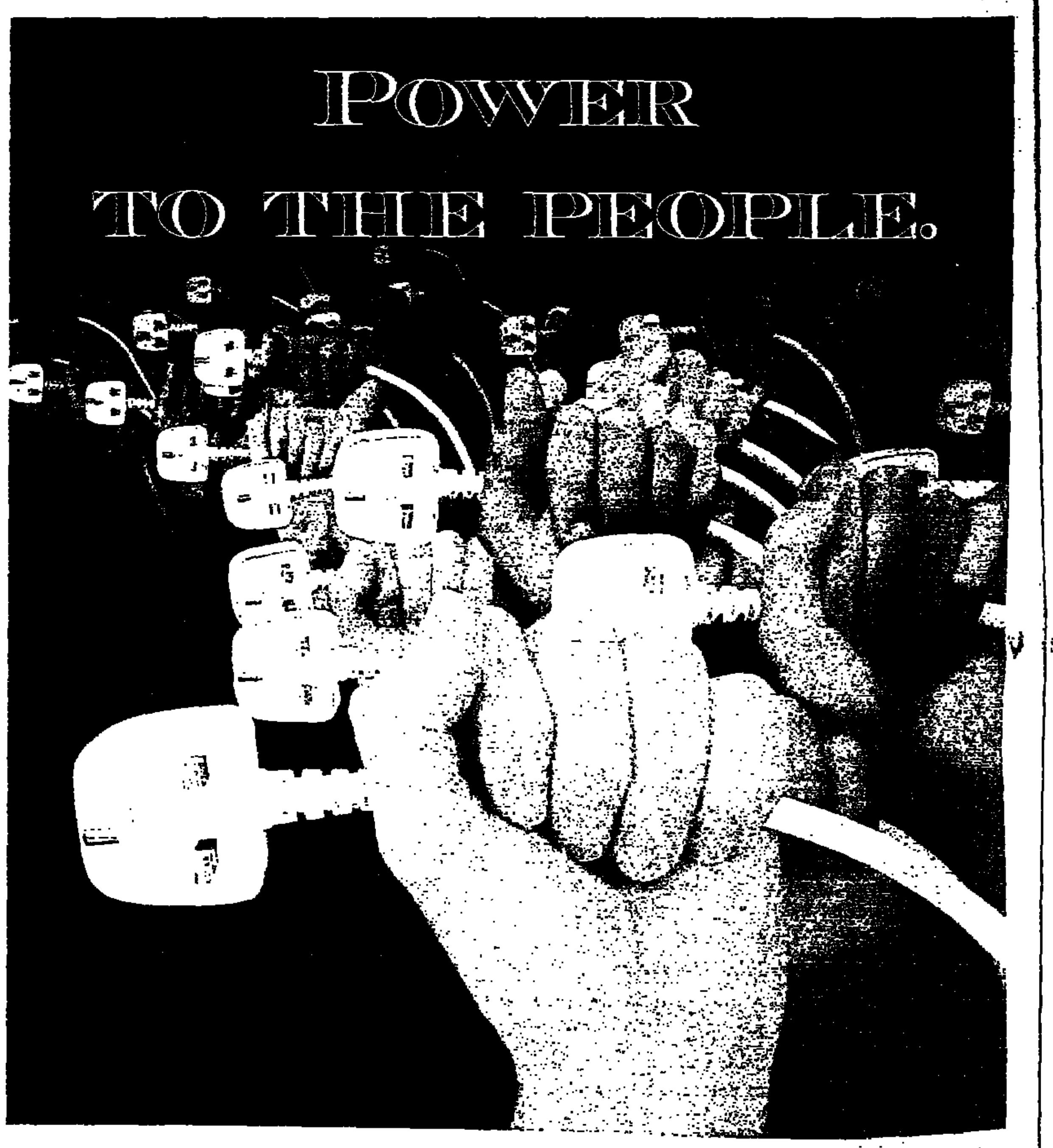
Western Europe will be rather changeable *but conditions will become more settled* as a large ridge of high pressure builds over the continent. Scandinavia will become more unsettled with Norway and Sweden, especially, having rain at times. South-east Europe will have plenty of sun.



Situation at 12 GMT. Temperatures maximum for day. Forecasts by Meteo Consult of the Netherlands

TODAY'S TEMPERATURES

		Maximum Celsius
Abu Dhabi	sun	35
Accra	shower	31
Algiers	sun	27
Amsterdam	shower	18
Athens	fair	22
Atlanta	rain	25
B. Aires	sun	20
B.ham	cloudy	18
Bangkok	rain	32
Barcelona	fair	23
Beijing	sun	21
Belfast	shower	16
Belgrade	fair	22
Berlin	shower	19
Bermuda	fair	27
Bogota	fair	18
Bombay	shower	33
Brussels	shower	19
Budapest	fair	18
C.hagen	shower	15
Cairo	sun	29
Cape Town	fair	20
Caracas	cloudy	32
Cardiff	shower	17
Casablanca	shower	23
Chicago	shower	19
Cologne	shower	21
Dakar	fair	32
Dallas	cloudy	26
Delhi	sun	32
Dubai	sun	35
Dublin	rain	17
Dubrovnik	fair	23
Edinburgh	rain	16
Faro	fair	24
Frankfurt	shower	21
Geneva	fair	23
Gibraltar	fair	24
Glasgow	rain	15
Hamburg	fair	17
Helsinki	fair	11
Hong Kong	rain	30
Honolulu	fair	31
Istanbul	fair	18
Jakarta	fair	32
Jersey	fair	18
Karachi	sun	34
Kuwait	sun	37
L. Angeles	sun	30
Las Palmas	sun	26
Lima	cloudy	20
Lisbon	fair	23
London	fair	19
Lux.bourg	shower	19
Lyon	fair	25
Madeira	fair	26
Madrid	fair	25
Majorca	fair	26
Malta	fair	26
Manchester	shower	18
Manila	shower	29
Melbourne	shower	16
Mexico City	fair	21
Miami	thund	31
Milan	shower	20
Montreal	fair	17
Moscow	fair	10
Munich	fair	23
Nairobi	fair	26
Naples	fair	24
Nassau	thund	32
New York	fair	24
Nice	shower	22
Nicosia	fair	29
Oslo	shower	12
Paris	shower	22
Perth	fair	24
Prague	fair	21
Rangoon	fair	31
Reykjavik	fair	9
Rio	fair	28
Rome	fair	24
S. Frsco	sun	29
Seoul	fair	22
Singapore	fair	33
Stockholm	fair	15
Strasbourg	cloudy	23
Sydney	shower	18
Tangier	cloudy	25
Tel Aviv	fair	30
Tokyo	fair	25
Toronto	shower	15
Vancouver	fair	21
Venice	fair	20
Vienna	fair	20
Warsaw	fair	14
Washington	shower	27
Wellington	fair	14
Winnipeg	shower	11
Zurich	shower	21



International TELECOMMUNICATIONS

SECTION 1

An Einstein with an intuitive grasp of relativity might understand it. But to the ordinary observer, international telecommunications has become a dazzlingly exciting but tantalisingly complex business, its seemingly limitless potential to transform the way we live and work, proving both invigorating and daunting.

A constantly developing mesh of global alliances between operators and suppliers is blurring the line between competition and co-operation. State-owned monopolies are opening their doors to private capital and their networks to rival operators as waves of privatisation and liberalisation sweep across the globe.

Companies foreign to the traditional telecoms business are staking out their claims in a new and little understood territory where telecommunications, computing and media converge.

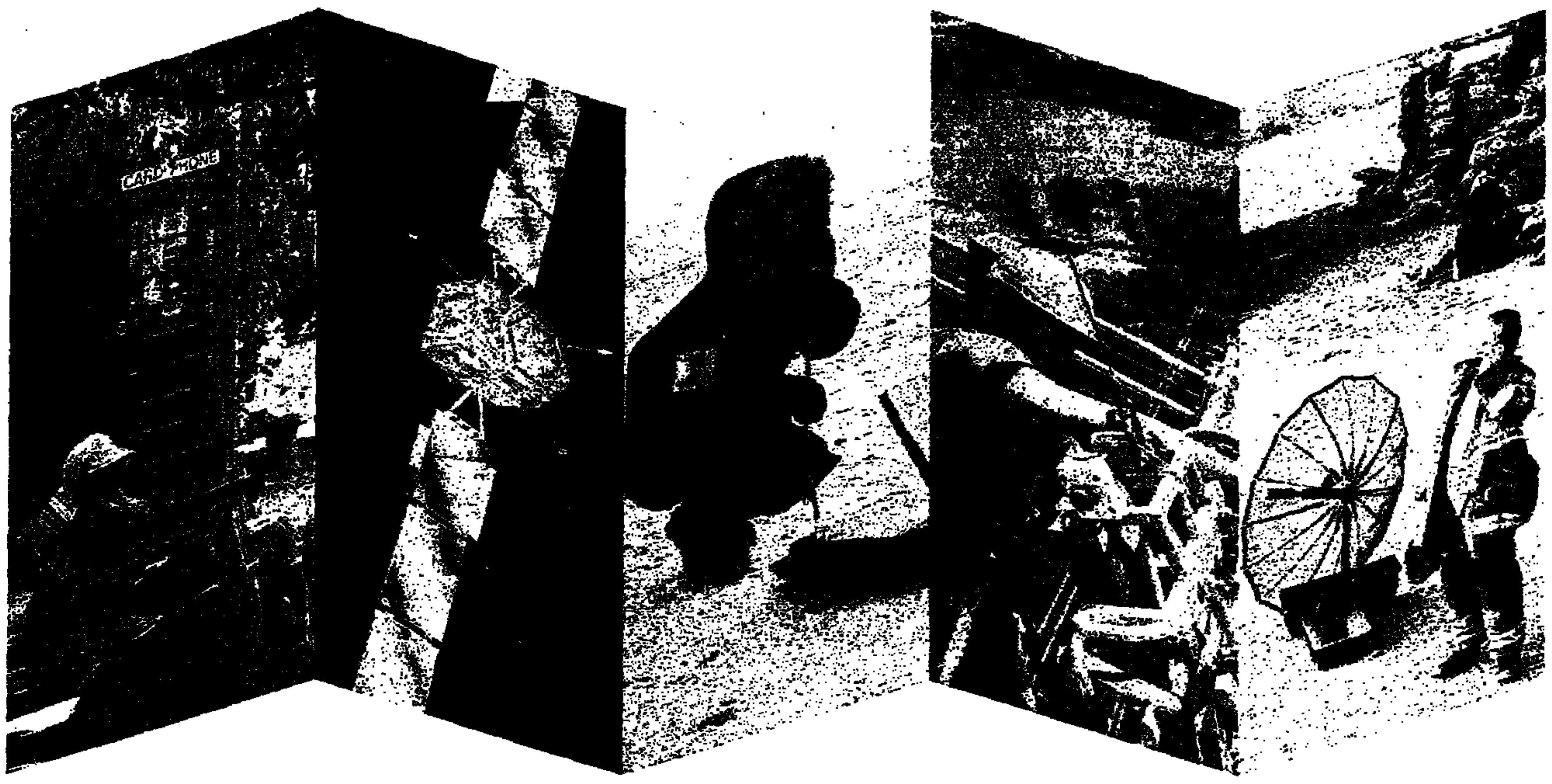
Typical of the transformations shaking the industry is the decision announced last month of AT&T, the largest US telecoms company, to restructure into three separately quoted companies – services, equipment and computing.

It is the most dramatic change in the company's structure since the forced divestment of its local phone operations in 1984. The aim is to give each company a better focus on its particular market and present a clearer market image for the equipment and services businesses.

Much of the confusion in the telecoms world arises from the speed with which the staid and orderly world of plain old telephone services ("pots") is being shaken up by the arrival of what older executives describe as "pretty awesome new stuff" (or "pans").

When the international telecommunications industry last gathered in Geneva in 1991 for its four-yearly exhibition and conference, the excitement centred on the entrepreneurial possibilities being provided by privatisation, liberalisation and globalisation.

There was no talk of a Global Information Infrastructure (GII) of the kind that Mr Al Gore, US vice-president, has been promoting so persuasively over the past two years. The Internet was an open secret among scientists and technologists, but few others.



Transforming the way we live and work

While the developed world experiments with exotic network applications, such as shopping and banking from home over the telephone, investment in telecoms in the developing world must double, to total more than $60bn a year, if unfulfilled and growing demand for conventional and new services is to be met, reports Alan Cane

Mobile phones and services were expensive, used chiefly by businesses which could justify the cost. ATM (asynchronous transfer mode), multimedia, video-on-demand, the information superhighway and other catchphrases of the cyberspace revolution had yet to become common parlance.

Today, more than 50m people across the world access the Internet, an *ad hoc* network of computer networks without ownership or management, every day. Multimedia personal computers can be plugged into telecoms networks as easily as telephone handsets. And telecoms operators, computer companies and media groups are sinking fortunes into dreams of an on-line world where entertainment and information of all kinds are available over high capacity networks.

Technology is driving the migration from pots to pans such as multimedia. Its development and potential will be examined in the introduction to the second section of this survey.

But while the developed world experiments with exotic network applications, such as shopping and banking from home over the telephone, the majority of the world's population has yet to make a telephone call.

According to the World Bank, investment in telecoms in the developing world must double, to total more than $60bn a year, if unfulfilled and growing demand for conventional and new services is to be met.

Ms Veronique Bishop and Mr Ashoka Mody point to the scale of the problem in a recent discussion paper* – "long waiting lists are common, especially in low income countries. Registered waiting lists for new telephone service in 1994 represented 27 per cent of the number of installed lines," they note. For many, even if they can afford a telephone, the wait can be 10 years or longer.

Bishop and Mody add: "The large unfilled demand for telecommunications imposes a severe cost on firms and households. Indeed, for firms competing in international markets, the situation is acute. Studies have shown that both the quantity (lines per population) and the quality of telecommunications are critical for generating exports and attracting foreign investment".

Bishop and Mody argue the only solution, one which is already being adopted by governments in both the developed and developing world, is a pluralistic market structure where

Continued on next page

INSIDE

Editorial production: Michael Wiltshire

■ **Europe:** Competition and regulation: By **Alan Cane**

Brussels batters down the doors

There are serious concerns about the speed with which telecom markets are opening up

Opening previously closed markets to the full force of competition is one thing. Putting in place a regulatory structure that nurtures commercial rivalry and effectively works against anticompetitive behaviour is quite another.

The UK and Sweden have the only truly open north European telecoms markets. They both have several years' experience of wrestling with the problems of regulation and competition. Now governments in mainland Europe, irrevocably committed to opening their telecoms markets to competition in both infrastructure and services by January 1 1998, must travel the same path.

There are four reasons why regulation is essential when telecoms markets are opened to competition:

□ First, to ensure that a basic telephone service is available to all at a reasonable price – the so-called universal service obligation.

□ Second, to ensure that new competitors are able to interconnect their networks with that of the former monopoly operator at reasonable cost.

□ Third, to prevent established operators from stifling competition at birth through their stranglehold on the final connection to the home or office.

□ Fourth, to ensure fair competition in new services expected through the "information superhighway".

It is certain that without European Union insistence on a firm deadline for market liberalisation, more than a few countries would have been happy to have kept their markets closed indefinitely.

As it is, Ireland, Greece, Portugal and Spain have been granted until 2003, if they wish, to dismantle monopoly provision of infrastructure and services. Their arguments are that their telecoms regimes are not yet sufficiently robust to withstand competitive pressures from outside.

Driving force

The EU, in fact, has been the driving force behind most aspects of the liberalisation of the European market, from the creation of a free market in modems, the devices which make it possible to transmit and receive computer data down a telephone line, to the adoption of proposals last June to open up the union's mobile telecoms markets.

There are serious worries, however, about the speed at which Europe's new telecoms market is shaping up. The fact is that no pattern for liberalisation throughout European has yet emerged. There is no clear agreement on the rate at which individual countries will introduce competition, what kind of regulatory regime each will introduce, or the steps they will take to ensure competition develops quickly and fairly.

Only a few weeks ago Mr Reed Hundt, chairman of the US Federal Communications Commission, warned that the EU was moving too slowly in developing regulations and rules for the sector.

The result has been a measure of uncertainty over the shape of both regulation and competition in mainland Europe which is making planning difficult for for companies anxious to take business from former monopolistic carriers.

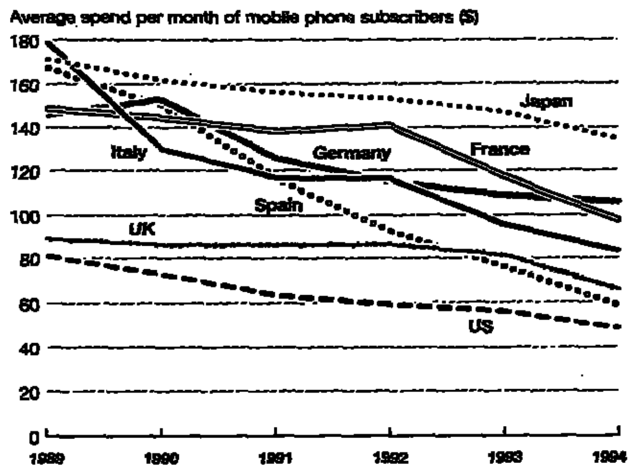
It is also a source of anxiety for government anxious to reduce their budget deficits by selling shares in their national carrier; at least five primary or secondary offerings are expected in Europe in the next few months. The absence of a clear regulatory structure may inhibit investors who will seek safer purchases elsewhere.

In Italy, for example, until the government agrees a regulatory framework for utilities, rapid sale of shares in Stet, the holding company for Telecom Italia, is unlikely. Telecom Italia was created last year as the result of the merger of five Italian operating companies and essentially has a monopoly in Italian telecoms. Shares in Stet are due to be sold this autumn or early next year, depending on circumstances. In July, its shares were listed on Wall Street as American Depositary Receipts in preparation for the sale.

Germany is a further example. Europe's largest telecoms market, it is dominated by Deutsche Telekom, the third largest provider of telecoms services in the world with some 39.4m exchange lines. It is burdened by debt, overmanning and an uncompetitive cost structure. Owned by the German government, it is due to be privatised next year. According to the consultancy Ovum, however, DT warned earlier this year that it would not consider itself ready for flotation until it knew how many licences would be offered to competitors and which services were to be liberalised.

Mobile phones

Average spend per month of mobile phone subscribers ($)



Source: MarketLine International

Competitive tariffs

A number of companies, both native and foreign, have formed joint ventures in Germany to be in a good position to challenge for operator's licences when voice communications is liberalised at the beginning of 1998. They have a clear expectation of being able to offer competitive tariffs to the lumbering Deutsche Telekom.

Brussels is responding to the tardiness of its members with brute force. There has been liberal use this year of a legal device, Article 90 of the EU treaty, which allows Brussels to act without consent from the Council of Ministers, the EU's chief decision-making body.

Karel Van Miert, the competition commissioner, used it to drive through directives dealing with both conventional and "alternative networks". In July this year the Commission agreed a draft directive which "implements the political agreement among the member states to liberalise all telecommunications services, including public voice telephony and telecoms infrastructure, by January 1, 1998". More critically, the draft directive called on member states to take the necessary steps before 1998 to ensure their markets were fully open by the deadline.

It also set a deadline of January, 1997 for the liberalisation of "alternative networks" – telecoms networks run by utilities such as railways and electricity companies.

Some have called for a form of Europe-wide regulation, directed perhaps from Brussels, but it seems unlikely the member-states would agree to this proposal. What is more likely is that each member will create its own code, with certain agreed common principles covering access to networks, interconnection charges and the universal service obligation to ensure a union-wide open market.

The UK has been dealing with these issues for more than 10 years; its experience suggests it will not be a simple process.

■ **Germany:** The last eight months have seen frenzied alliance-making in Europe's largest telecoms market, reports **Michael Lindemann** in Bonn

Five big alliances line up for battle

While newcomers prepare to take on Deutsche Telekom, the German operator itself has not been idle

In late August, when AT&T finally settled for a German partner, months of speculation about the future of telecoms in Germany came to a sudden end.

Analysts and consultancies will no doubt spend hours between now and 1998 developing and revising scenarios which might be expected when Germany, the world's third-biggest telecoms market in revenue terms, is fully liberalised.

But once AT&T, the world's largest telecoms operator, had settled for a German partner, eight months of frenzied alliance-building came to an end and it at least became clear who would be competing with Deutsche Telekom, the monopolist which by 1998 will be partially privatised.

Five big alliances between German and international telecoms operators have been moulded this year:

● Deutsche Telekom has a strategic alliance with France Télécom, the French operator, dubbed Atlas. That joint venture in turn owns 20 per cent of Sprint, the third-largest US long-distance carrier.

● Communications Network International: a three-way venture which is 50 per cent owned by Mannesmann, the engineering company which has enjoyed considerable success with its D2 mobile phone network. The two other big partners are Deutsche Bank and RWE, the energy-based conglomerate; each hold 25 per cent. Uniworld, the joint venture between AT&T and Unisource has signed a letter of intent and begun talks which could end with it taking a stake in CNI.

● Vebacom: a joint venture between Veba, another utility with telecoms ambitions, and Cable & Wireless, the international telecoms group. Veba owns 55 per cent and has management control.

● Viag InterKom: a joint venture between Viag, the Munich-based industrial group, and British Telecommunications, the UK-based operator which has a global alliance with MCI, the second-biggest US long-distance carrier. Viag and BT own 37.5 per cent each and the balance is likely to be sold to one or more German partners.

Wolfgang Bötsch, the German posts and telecoms minister

● Thyssen Telecom: a company which is 90 per cent owned by the steel-based industrial conglomerate Thyssen and has a strategic partnership with BellSouth, the largest of the so-called Bell regional operating companies.

Thyssen, arguably the weakest in the pack because it is not as rich as the utilities and does not have a significant fibre optic network of its own, has been the most aggressive so far.

T-Net, its corporate network subsidiary, has leased lines from Deutsche Telekom to connect Germany's biggest cities, and is busy trying to lure customers away from Deutsche Telekom.

The company has scored some initial successes. Apart from users such as Blohm and Voss – the Hamburg shipyard which belongs to Thyssen and is therefore part of the so-called closed user group of companies which operators may build up before 1998 – Thyssen has also won business by offering to look after the telecoms needs of Nokia, the Finnish telecoms group, Liebherr, the engineering company and Total, the French oil group.

The others are planning similar operations. Viag InterKom has teamed up with Bayerische Vereinsbank and Bayerische Hypobank, the two big Bavarian banks, and plans to launch corporate network services this autumn based on Viag's own fibre optic network which is about 4,000km long.

Thyssen and others risk being played off against Deutsche Telekom by customers looking for a better deal. While the investment in new clients may pay off after full liberalisation in 1998, the existing corporate network activities are likely to have only a limited impact on Deutsche Telekom's business before then.

"The new entrants who are positioning themselves to target Deutsche Telekom's private network business would be doing extremely well to take more than a few per cent of the company's total business," says Laurence Heyworth, a telecoms analyst at Robert Fleming Securities in London.

As the five telecoms groups develop their strategies, several will be able to expand their existing operations after Mr Wolfgang Bötsch, the minister for post and telecommunications, approves as many as 14 so-called alternative networks.

Veba, for example, wants to build a backbone network in the Rhine-Ruhr area which is supposed to connect companies, institutions and about 10,000 households which are to be used to test multimedia services.

The three mobile phone operators – DeTeMobil, Mannesmann and E-Plus – have meanwhile received permission to build their own networks instead of leasing lines from Deutsche Telekom.

Other services are also making inroads into the German market. American Teleconferencing Services, a Kansas-based company, has been offering audio teleconferences in Germany for less than a year but has already picked up about a dozen regular customers. Bayerische Vereinsbank, one of them, says the service is "significantly cheaper" than the equivalent offered by Deutsche Telekom.

But while the newcomers get ready to take on Deutsche Telekom, the German operator itself has not been idle. In August, it cut the cost of calls to the US by 27 per cent and also reduced rates to Nordic countries by between 12 and 38 per cent. According to Margrit Sessions of Tarifica, the consultancy which specialises in tracking tariffs, the latest cuts mean that the German rate for calls to the US is now among the lowest in Europe.

The world's third-biggest telecoms operator also has ambitious plans to shed 60,000 of its 230,000-strong workforce by the year 2000 and raise productivity for each employee from the 1994 level of DM272,000 to about DM450,000.

Transformation under way

Continued from page one

multiple telecoms operators compete with and complement each other.

The international platform for this debate is the World Trade Organisation where more than 40 member-nations have been involved in discussions aimed at opening markets in telecoms services for the past several years.

These talks were not part of the Uruguay Round of negotiations under the General Agreement on Tariffs and Trade, which closed last year because of the complexity of the issues involved.

Officials did not believe it would be possible to achieve a consensus in the timescale. Now it is hoped a global accord can be achieved by April next year when the talks are set to close. Whether international agreement is reached or not, the processes of privatisation and liberalisation can neither be halted nor reversed. The consequences for the world's larger telecoms operators will be profound.

The essential problem for all countries liberalising their telecoms markets is to create a regime which is competitive yet prevents the former monopoly operator from crushing rivals through a combination of size and control of the "local loop", the final connection to the home or office.

The US market has been in many respects open for more than a decade. AT&T was split into a long-distance carrier and a group of regional operating companies which were not permitted to compete with each other. Now Congress is likely to approve measures which will free the local and long-distance companies to compete in each other's markets.

The Japanese government is pondering the future of the giant Nippon Telegraph and Telephone (NTT) and may decide to break it up into a long-distance carrier and several regional carriers as a way of promoting competition.

And in Europe, the European Commission has given EU member-states the date of January 1, 1998 to dismantle regulations that have allowed national monopolies to dominate telecoms in the region.

Privatisation is picking up speed: Denmark, Germany, the UK, Greece, Belgium, the Netherlands, Italy and Portugal have already privatised their telecoms operators or expect to by 1998. Investors may be asked to find $30bn to fund these privatisations over the next few years, raising questions of an adequacy of finance.

> Investors may be asked to find $30bn to fund privatisations

Competition is expected to prove a powerful incentive to efficiency in companies which were formerly state-owned.

The chief beneficiaries of all this activity are the industry's customers, who have seen prices fall rapidly. AT&T points out that in 1945 a 10-minute radio-telephone call between the US and the UK cost $40, day or night, equivalent to $340 in 1995 money. The actual 1995 charge for a 10-minute daytime call is $10.93.

Against this background, the growth of the mobile telephone business has been dramatic. Improvement in semiconductor and radio technology have brought down the price of both handsets and services. Conservative estimates suggest some 251m subscribers will have signed on worldwide by the turn of the century.

The full potential of wireless technologies is only just becoming appreciated. According to the US Office of Technology Assessment, "new radio-based services now being developed will use advanced digital technologies to bring a wide array of services to both residential and business users".

The Federal Communications Commission, which regulates telecoms in the US, raised almost $10bn this year from the auction of radio frequencies that will be used to deliver next-generation mobile telephone and data services.

In Europe, the most optimistic forecasts suggest there could be almost 78m subscribers on the networks by the turn of the century from just over 16.3m at present. There are some 400,000 subscribers in eastern Europe.

Wireless telephony, with no need of conventional and expensive infrastructure, may be the answer to the rapid deployment of telecommunications in developing countries. With a number of consortia vying to put satellite based, hand-held phone systems in place, it could bring to reality the dream of communications of any kind, any time and anywhere.

**Exploiting Competitive Opportunities in Telecommunications; Finance and Development, June 1995; published by The World Bank*

■ **Deutsche Telekom:** Operator report by **Michael Lindemann** in Bonn

Surprise breakthrough

Link-up with Sprint of the US comes as welcome news

When Deutsche Telekom won preliminary approval in mid-July for its link-up with Sprint, the third largest US long distance carrier, the company was sure that this was a sign of things to come.

The good news came just two months after Mr Ron Sommer, the former number two at Sony Europe, had taken over as Deutsche Telekom's new chief executive and many believed the surprise breakthrough had been all his doing.

The link across the Atlantic with Sprint, one of the key elements in the company's international strategy, may have been helped by Mr Sommer's arrival.

The dapper-looking German has considerable international management experience which no doubt added impetus to the talks and his fluent English will have helped get Deutsche Telekom's message across. He is undoubtedly a class act compared to his predecessors who had launched the Sprint deal over a year ago.

But while the US Justice Department made a decision earlier than expected – especially judging by the time it took to clear the earlier link-up between British Telecom and MCI – other important hurdles still have to be overcome.

The DoJ is just one of three institutions which must approve the deal. The Federal Communications Commission, the US telecoms watchdog, and the European Commission must still clear the alliance and while Deutsche Telekom hopes this will still happen this year, observers are more cautious. One reason for the caution is that AT&T and MCI, the other two US long-distance carriers, continue to lobby hard to have the deal postponed until Germany fully liberalises its telecoms market – a step that is not planned until 1998.

Ron Sommer: Deutsche Telekom's new chief executive

Sooner or later, however, the tie-up with Sprint – which is to be called Phoenix – is expected to be successful thereby creating the fourth major global alliance competing for a significant share of the $500bn world market for international telephone services.

But while Mr Sommer is hoping to win over the US authorities, he is fighting another battle in Brussels to persuade the European Commission to approve the so-called Atlas joint venture between Deutsche Telekom and France Télécom. Founded two years ago, Atlas is the first step in the German operator's strategy to become an international telecoms force. However, Mr Karel Van Miert, the EU's competition commissioner, remains to be persuaded that an alliance between Europe's two biggest operators will be good for competition.

While Mr Martin Bangemann, the German commissioner responsible for telecommunications, has been more receptive to arguments that Europe must create a powerful telecoms operator to take on the global competition, Belgium's Mr Van Miert sees things very differently.

He has warned both France Télécom and Deutsche Telekom that they have a dominant share of the data transmission market. Both companies have, as a result, begun unravelling parts of Atlas including Eunetcom, the unsuccessful outsourcing venture which, according to industry sources, is believed to have lost millions of dollars.

Now Mr Van Miert is looking for assurances from the French and German governments that they will cooperate with his plans to introduce an article 90 directive in 1996 in order to liberalise certain areas of Europe's telecoms infrastructure before the overall deadline of January 1, 1998.

The directive would, for instance, allow electricity utilities and other owners of telecoms infrastructure to carry data and other services which are already liberalised.

The plans being hatched in Brussels have not delighted Mr Wolfgang Bötsch, the German

Continued on page 4

■ **The UK:** Relations between British Telecom and the regulator have deteriorated, reports **Alan Cane**

Review row rumbles on

BT regards it as essential to protect its home market while it persues an aggressive strategy overseas

British Telecommunications occupies an ambiguous position in the UK. On one hand it is the former state-owned monopoly operator which clocks up profits at £111 a second, picks fights with the industry regulator and makes it difficult for rivals to gain a foothold in the UK's intensely competitive market.

On the other, it is a national champion, the largest company quoted on the London Stock Exchange and the third largest quoted company in Europe. It is recognised as a British high technology player fit to mix it with the US giants and is pursuing a daring strategy aimed at making it Europe's leading telecoms company. BT had pretax profits last year of £2.66bn on revenues on £13.9bn.

In the UK it faces competition not only from Mercury Communications, the UK's second largest operator and a number of other more-or-less conventional players including Energis, Colt, MFS and Ionica, but also from the cable television operators.

Permitted since 1991 to offer telephony in addition to entertainment, they are now slowly beginning to make inroads on BT's market share. Michael Hepher, BT group managing director, said earlier this year that 50,000 BT customers a month were signing up with cable operators. It must be said, however, that the challenge from the cable companies, although real, is haphazard and lacks focus.

While the UK has one of the most competitive telecoms regimes in the world, it has also one of the most regulated, as the government has sought to contain BT's advantages as incumbent operator and owner of the national network.

It is an unsatisfactory situation, leading this year to the publication of the most important review of telecoms policy in the UK since the the market was opened to free competition in 1991 following the so-called "duopoly review".

The shape of things to come: this 'office on your arm' – with phone, fax, videophone and computer – is BT laboratory's design concept for the ultimate communicator, worn here by Ronnie Fox, a City of London solicitor

Called "Effective Competition: Framework for Action", it is the work of Mr Don Cruickshank, director of the Office of Telecommunications. His aim was to seek ways of promoting competition while removing much of the regulatory framework.

Inevitably, the study deals with the regulation of BT as dominant operator. Its competitors, Mr Cruickshank argues, have to be given time and space to establish themselves. Many of these are subsidiaries of large US companies. Sir Iain Vallance, BT chairman, has noted, writing bitterly: "It is hard to imagine UK companies benefiting from such positive discrimination in any other country in the world."

Over the past year, in fact, relations between BT and the regulator have deteriorated, culminating in an unprecedented reference to the Monopolies and Mergers Commission over who should foot the bill for "number portability" – measures to allow customers to keep their number when changing operator. BT claims to be, in principle, in favour, but argues that its shareholders should not have to pay to make it easier for customers to defect to competitors. Mr Cruickshank clearly believes BT is simply using delaying tactics to slow the advance of the cable operators.

Practical reforms

The review contains a number of practical reforms. The cap which prevents BT from raising line rental charges by more than a specified amount is abolished, opening the door to lower call charges. Fees called access deficit charges which, in theory, BT's competitors pay the UK operator to operate and maintain the national network they are all obliged to use, are also abolished. (In practice, only Mercury paid ADCs, and then only for certain types of call).

The chief thrust of the review, however, is a proposed change to BT's licence which would essentially outlaw any kind of behaviour which Mr Cruickshank deems anti-competitive and give him powers to punish it. It is possible BT will find this unacceptable, triggering another referral to the MMC. It was already uncomfortable with measures Mr Cruickshank wanted to make it easier for him to check whether the company was unfairly cross-subsidising the various different parts of its business. The new licence condition, BT believes, makes him judge, jury and executioner in his own court.

It is essential for BT to protect its home market while it pursues an aggressive strategy overseas, from which it hopes it will emerge as Europe's leading telecoms operator by the turn of the century.

It is forming a series of alliances with companies in each of the leading European economies, to be in a strong position to challenge for operator licences when the European market is thrown open on January 1, 1998. So far, the scale of the ventures are small, the funds committed are limited, and the company is not making profits in mainland Europe. But if the gamble pays off, the rewards could be large.

In Germany, Europe's richest market, for example, it has joined hands with the industrial group Viag to form Viag Interkom. It is offering business customers the most it can under the existing rules: data services and intra-company private voice and data networks.

In Italy it has an alliance with Banca Nazionale del Lavoro called Albacom, aimed at offering similar services to the top 3,000 medium to large companies, while in Spain it has a 50 per cent stake in Megared, a data transmission company owned by Banco Santander.

The aim is to fill the remaining gaps in the jigsaw with similar alliances. BT's principal international vehicle is Concert, the result of an alliance with MCI of the US, in which it has a 20 per cent stake.

Strategy

Concert is the heart of BT's international strategy. It began operations in June 1994 and provides international telephone and communications services for multinational corporations. According to the UK-based consultancy Ovum: "It allows companies to link their voice and data communications in offices across the world through networks that seem private but are provided and managed by Concert".

Not all BT's overseas ventures have been successful, however. Its Australian subsidiary earlier this year sued the New South Wales government and Telstra, the Australian national operator after the breakdown of an "outsourcing" deal through which BT was to have provided telecoms services to government agencies.

BT's complaints about Telstra's behaviour brought to mind similar grumbles from BT's UK competitors about BT's competitive strategies. It is never easy to win market share from a well-entrenched national carrier. BT's European odyssey will be no push-over.

View from the Top – Sir Iain Vallance, chairman of British Telecom: see page 19

■ **France Télécom:** Operator report by **John Ridding** in Paris

Risky road to reform

The company's new head has won plaudists for his managerial skills and track record

After months of uncertainty and upheaval, the political masters of France Télécom have replaced Mr Marcel Roulet as chairman at the state-owned group and outlined their strategy for the telecoms giant.

Michel Bon, named as the company's new head earlier last month following the surprise rejection of the post by François Henrot, is in charge of implementing this strategy. His performance will determine whether France Télécom can adapt to the ending of its monopoly and the arrival of fierce competition following the liberalisation of the European telecoms market from 1998.

At the heart of his mission, and the government's policy, is the preparation of a controversial reform of France Télécom's legal status. François Fillon, the minister for information technology, describes as "urgent and vital" the reform, which will transform the operator from an arm of the state administration to a normal company with its own share capital.

The reason for the urgency is that the reform will allow the sale of stakes in the company. This in turn will enable France Télécom to seal strategic alliances with industry partners, notably Deutsche Telekom, and to strengthen its competitive position in the liberalised telecoms markets of the post-1998 period. The reform will also enable France Télécom to raise funds for the massive investments required in the developing markets of telecoms and multimedia.

The problem is that reform is highly sensitive. Trade unions at the French operator are staunchly opposed to a change in its legal status, fearing it will clear the way for privatisation and job cuts.

A strike by three-quarters of the company's 150,000 employees in 1993 forced the government to back down from a previous attempt at reform. This time around, union leaders are making similarly combative sounds. "We are totally opposed to reform and privatisation," says an official at SUD, one of the largest union groupings at France Télécom. He says the union is talking with its counterparts at the operator about forming a united front against reform. Elections for the company's staff councils later this autumn are likely to further exacerbate the battle against the proposed changes.

Mr Fillon believes such opposition can be overcome. "There will be an intensive dialogue," he says, claiming the company's staff can be convinced of the need for reform and reassured about their own positions.

To help with Mr Bon'stask of reassurance, the government has pledged to retain a majority stake in France Télécom. "We want it to be a model of a public sector service," says Mr Fillon. He adds

> Trade unions strongly oppose changes in their legal status

that employees will retain their civil servant status and the consequent safeguards concerning employment, pay increases and career scales.

Whether this will prove enough to allow reform is one vital question facing the French operator. Another is whether the government's reform plan will help win approval from regulators for France Télécom's vital strategic projects.

The European Union's competition authorities are weighing the planned Atlas alliance between the French operator and its German partner. The US Federal Communications Commission is also scrutinising the further alliance between the two European companies and Sprint of the US. The alliances will allow France Télécom and its partners to take on the other global giants in the telecoms sector. Not surprisingly, these are resisting the proposed projects. AT&T of the US, for example, is lobbying hard against a green light. For its part, FCC says its decision will be partly influenced by the ownership status of the French and German operators.

French authorities express confidence concerning approval for the projects, partly because of steps taken to allow increased competition in the domestic market. Utility companies such as Générale des Eaux are competing with France Télécom in mobile communications and are girding for battle in fixed network telecom services. Alternative network operators, such as SNCF, the national railway system, have also been granted approval by the state telecoms regulator. Such union, regulatory and competitive battles add up to a formidable challenge.

But the new chairman has several cards up his sleeve. The 52-year old head of the ANPE, the national unemployment agency, arrives with plaudits for his managerial skills. He also brings experience from the private sector. Although a product of the Ecole Nationale d'Administration, the elite university which provides a training ground for top civil servants, he headed the Carrefour supermarket group before moving to the ANPE.

"The challenges for France Télécom lie increasingly in marketing, commercialisation and responding to consumer needs," says one senior government official. "The emphasis must be away from engineering feats to selling products in the market place".

Perhaps the strongest assets in Mr Bon's hands, however, are the strengths of the French telecoms giant. Although much of France's public sector industry has been blighted by inefficiency and bureaucracy, France Télécom has developed into a strong and lucrative organisation. In terms of lines operated per employee, one measure of productivity, it scores more highly than British Telecom and Deutsche Telekom.Last year it recorded net profits of FFr9.2bn (£1.18bn). Maintaining such profits after the end of Europe's telecoms monopoly will, however, be a tough task.

Eastern and central Europe: Hungary was a regional pioneer in bringing in foreign partners to modernise telecoms, writes **Anthony Robinson**

Race to update national networks

Former communist states are selling strategic stakes to raise finance and gain telecoms technology

"By the year 2000, SPT (the Czech telecoms company) must become a customer-friendly, world-class, financially sound, competitive company and be strong enough to survive as part of the global telecommunications market, albeit small by world standards."

These are the ambitious words of Mr Karel Dyba, the Czech minister responsible for co-ordinating the partial privatisation of SPT. He also has broader aims for modernising the country's out-dated and inadequate telecommunications system.

There is substance to the ambition, too: shortly after Mr Dyba laid out these aims, the Czech government finalised a \$1.45bn (£900m) deal with a Dutch-Swiss consortium at the end of June for a 27 per cent stake in SPT.

His goals are widely shared throughout central Europe, which is leading the rest of the former communist world in the long march towards modernisation of their telecommunications systems. Telecoms are recognised as an essential tool to facilitate reintegration of the formerly isolated communist states into the global economy.

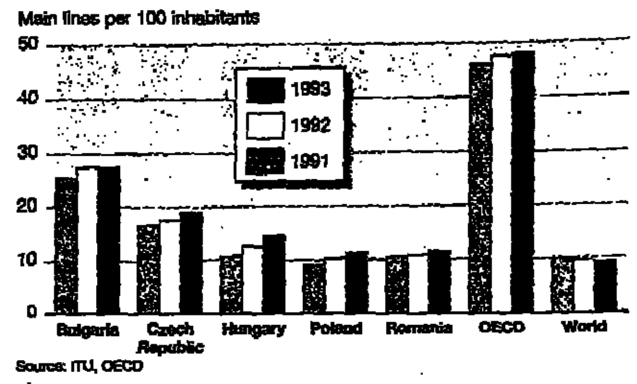
The Czech government has managed to define its objectives more clearly than most. But throughout the region, selling off strategic stakes in the formerly state-owned monopolies to western companies is seen both as a source of much-needed finance and the best way of gaining access to the new technology needed both to upgrade the domestic system and link up to global networks.

Hungary was the pioneer in bringing in foreign partners to modernise its national telecommunications network, although the collapse of the Soviet empire in 1989 led to a rapidly growing number of city or regional mobile telephone link-ups aimed principally at the lucrative business market. Quick to install and highly profitable, cellular telephone systems have been set up in the capitals and big centres of most former communist states, initially to cope with the immediate needs of the foreign investors and businessmen who flooded into the area, but increasingly to serve the fast-growing army of home-grown wheelers and dealers.

The first big privatisation deal involving foreign strategic investors in the modernisation of nationwide trunk telephone monopolies took off in December 1993 when MagyarCom, a US-German consortium of Ameritech and Deutsche Telekom, paid \$875m for a 30.3 per cent stake in Matav, the Hungarian state telecoms company. The government is finalising its strategy for selling off a further 40 per cent in Matav, primarily to raise in excess of \$1bn, of which the bulk will be earmarked not for modernising telecoms but for reducing Hungary's large foreign and domestic debt.

Magyarcom has made clear its interest in transforming its existing minority stake into a majority holding, but this is politically sensitive for a socialist-led coalition government which would prefer to offer stock to a combination of passive foreign investors, such as pension funds, and through a forint denominated public offer to domestic investors through the Budapest stock exchange.

Central and eastern Europe



Source: ITU, OECD

Throughout eastern Europe, privatisation of telecoms and other utilities requires deft handling, both to assuage popular suspicion about "selling the family silver" to foreign companies, and to rein back the ambitions of the often technically competent but commercially inexperienced managers of the national telecom companies.

Thus far, the Czech government, led by Mr Vaclav Klaus, appears both to have laid out its goals more clearly than most and to have demonstrated most sophistication in tackling the complex political, regulatory and other non-technical issues involved in the transformation of this vital economic sector.

"We worked to persuade Czech customers that opening up SPT to foreign investors was in their interests. We explained that it was the best way of achieving faster access, cheaper calls and closing the technological gap with the rest of the world," says Mr Dyba.

But the Czech government was also prepared to spell out some harsh home truths to the managers of SPT, who were reminded they were not the owners of the then still wholly state-owned company and therefore not in a position to impose their own corporate vision on the future shape of Czech telecommunications.

Broader political considerations also affected the Czech government's decision to choose telecoms companies from two small European countries in preference to the French, German and Italian-led consortia also bidding for SPT. The Czechs were wary of becoming too economically dependent on Germany, whose Deutsche Telekom is playing a key role together with Credit Suisse First Boston in modernising the telecoms of neighbouring Hungary; reluctant to get too closely involved with France Télécom after bad experiences in previous deals involving Air France and Total; and wary of involvement with Stet, the Italian telecoms company.

Money proved to be a secondary consideration, even though the keen interest of all bidders in securing the SPT deal led to a highly advantageous result for the Czech treasury, well in excess of the "billion dollar" estimates widely bandied about before serious bidding began.

Mr Dyba, for whom piloting the partial privatisation of SPT through the shoals of competing bids and egos was a political test, generously gives much of the credit to his bevy of foreign advisers, including bankers J P Morgan, lawyers Squires Dempsey, Saunders, and consultants Arthur D Little. They helped tie up the deal in a way which achieved an ultimately quick and clean decision by the Czech cabinet.

While Hungary and the Czech republic have held the telecoms limelight to date, significant investment has taken place in modernising telecommunications in smaller countries such as Slovenia, and to a lesser extent Slovakia, the Baltic states, whose desire for modern telecommunications also reflects their need to break away from the Moscow-dominated telephone links of the Soviet period, and in Romania and Bulgaria.

Romania has concentrated on upgrading its trunk lines with optical fibre lines. In July, for example, Siemens won a DM55m (£24.4m) contract to install a 3,200km-long optical fibre digital network for state-owned Rom Telecom. This is the second stage of an eventually 5,000km long telecom network linking towns of which the first 1,700km has already been completed by Italy's Sirti Spa and Tomen of Japan.

But Poland, the most populous country in the region with the largest and fastest growing economy, is likely to be the main focus of attention over the rest of the century. A recent report by International Technology Consultants, a Bethesda-based US company, said Poland represented "virtually unlimited business opportunities in communications".

Telekomunikacja Polska, the state-owned company, has invested over \$1bn over the last five years in upgrading the trunk network and expects to spend another \$5bn over the next five years, according to Mr Andrzej Zielinski, the telecommunications minister. But Poland has been slow to start privatisation of Telekom Polska, and plans are still being drawn up for stage-by-stage privatisation over the next decade.

In the meantime, a new telecommunications law is expected to inject competition by allowing local private telephone operators to set up localised "loops". These are expected to account for 20 per cent of the telecoms market by the end of the decade.

But a note of caution is required. In August, the telecommunications ministry announced tender terms for two mobile telephone operating licences, each worth between \$200m and \$400m. A long list of companies, including AT&T, Bell Atlantic, US West, British Telecom and Cable and Wireless have shown interest.

The process is being anxiously watched by existing mobile phone operators Centertel, a joint venture between Telekom Polska, Ameritech and France Telecom. Four years ago the foreign partners paid \$75m to the Polish government on the understanding that one of the GSM licences now on offer would be reserved for them. It remains to be seen whether this understanding will be honoured.

Russia: Rostelekom, a semi-privatised company, is involved in some potentially enormous projects, reports **John Thornhill** in Moscow

Anxiety over pattern of developments

A patchwork quilt of cellular, wireless and fibre optic telephone networks is now spreading across the country, but the main focus is on the most lucrative markets

Foreign visitors to the former Soviet Union used to complain about many things: hotels without bath plugs; empty restaurants without free tables; and telephone lines which were crackly, constantly engaged and subject to strange interruptions from coughing KGB eavesdroppers.

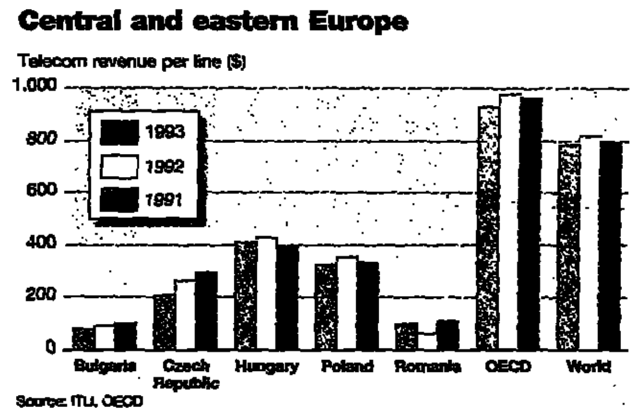
But, like so much in the former Soviet Union, the country's telephone system is changing rapidly. The formerly closed society is opening its communications markets to the outside world with extraordinary speed. There scarcely seems to be a foreign telephone operator that is not contemplating some investment in the potentially vast new market of 150m. But one of industry's concerns is that much of this development is unplanned. Paradoxically for a country that was famed for central planning, Russia's ministries appear to have little concept of how the industry ought to develop.

There are fears that telephone operators will simply cream off the most lucrative business markets, ignoring the needs of the remote regions. Already, long-distance call volumes are declining in some outlying parts of Russia.

Industry experts suggest that historically it has been national telephone monopolies which have built comprehensive country-wide networks, subsidising loss-making infrastructure projects with profits from other lucrative markets. There appears to be no such imperative in modern Russia.

There is certainly a massive need for new developments throughout the country. In Soviet times, the telephone market was given a low priority and its evolution was closely monitored by the intelligence services. It is estimated that only 7 per cent of the population had access to a telephone in Soviet times, with some individuals waiting for as long as 36 years to be connected. From this low base, the telephone market has been growing rapidly; according to some estimates, Russia's 28 per cent compound annual growth rate for international traffic volume was second only to India's between 1983-92.

Central and eastern Europe



Source: ITU, OECD

The dominant participant in Russia's telephone market is Rostelekom, a semi-privatised company estimated to control more than 90 per cent of domestic long-distance and international traffic. The company, which has a licence to operate such services until 2004, makes the most of its near-monopoly position and has already succeeded in raising the price of international calls to world standards and – since November 1994 – indexing its tariffs to future rates of inflation.

Rostelekom is one of the few Russian companies to have been audited according to international accounting standards and appears to be highly profitable. Earlier this month, Coopers & Lybrand, which completed the audit, estimated Rostelekom had made pre-tax profits of \$130m (£81.2m) on revenues of \$837m in 1994. Its net income was \$30m.

A recent research report on Rostelekom by Brunswick, a Moscow-based stockbroking firm, suggested the company should be able to increase profits substantially in coming years, benefiting from the high growth in international traffic and increasing tariff rates.

Although the company has been dogged by payment arrears, it also has good cash flow with which to finance infrastructure spending. It has hired Merrill Lynch, the US investment bank, to advise it on its future financing needs amid talk that it will soon seek to raise money on international capital markets.

Rostelekom is involved in some potentially enormous projects. The most ambitious of them is the Russian Overlay Network, which aims to connect 50 of Russia's biggest cities with 50,000km of fibre optic cables. The venture, labelled the 50 by 50 network, includes several Russian operators, US West, France Telecom and Deutsche Telekom, and would require tens of billions of dollars to reach completion within the next 10 years. But the venture has made slow progress because of the doubts among foreign investors about the uncertain legal and investment climate in Russia and resistance from local Russian telephone operators.

But four other big infrastructure projects to connect Russia with international markets are making swifter progress. Last year, Tele Denmark and Rostelekom co-operated to build a fibre optic cable linking Russia and Denmark, and an eastern gateway to Japan and South Korea has also been completed with help from Siemens. A southern gateway, linking Russia, Ukraine, Italy and Turkey is due to be completed next year with an international exchange in Rostov-on-Don. And the Japanese Eximbank has lent \$200m to Rostelekom to help finance a Trans Siberian link, which will give 20 industrial centres in central Russia access to long-distance and international dialling.

But there are many telephone projects in Russia which are developing outside the purview of Rostelekom, particularly in the cellular sector. The chirruping of mobile phones in Moscow's smartest restaurants is now a feature of Russian life. The US Andrew International Corporation is also pressing ahead with a \$500m fibre optic project to connect Moscow with the east Asia.

Some projects have been aimed specifically at Russian business customers who are fast developing a need for the latest in telephone services. For example, Sovintel, a joint venture between Rostelekom and the US GTS group, has just established an integrated digital network in co-operation with Nortel and British Telecommunications offering Moscow businesses digital voice, video conferencing and electronic mail facilities.

The venture claims Russia's relative backwardness has effectively enabled it to skip a generation of telephonic services, and some customers now have access to more sophisticated services than those generally available in the west.

Some of Russia's regional leaders are also showing an interest in developing telephone networks as they jostle with other areas for economic advantage. A novel wireless telephone system designed by Hughes Network Systems of the US and Alcatel-Alsthom of France has just been created in the semi-independent republic of Tatarstan. When launching the service earlier this year, Mr Mintimer Shaimiev, the Tatar president, said he saw many advantages in encouraging the development of such modern infrastructure to attract other investors to the region. This system could "make dramatic improvements to the area's economic and social well-being".

As Moscow's grip on the control of economic life diminishes, western companies are hoping there will be many more such regional initiatives.

Deutsche Telekom alliances

Continued from page two:

minister for telecommunications, because it means more competition for Deutsche Telekom ahead of its crucial privatisation next year. However, both the minister and the company are likely to co-operate with Mr Van Miert because Atlas is the cornerstone of Deutsche Telekom's international strategy. Greater liberalisation of infrastructure in Europe before 1998 could also help the Germans and the French argue the case in Washington for an alliance with Sprint.

Getting Atlas and Phoenix off the ground would make Deutsche Telekom a powerful force in international telecoms – at least as powerful as it already is as the world's third biggest operator in sales terms with turnover in 1994 of DM61bn. But while the grand strategic alliances are being engineered at the company's headquarters in Bonn, the company is already making inroads into several local markets especially through DeTeMobil, its mobile phone subsidiary.

DeTeMobil has a stake in Mobile Telesystems, a company which built and now operates the first digital telephone net in Moscow. The Germans are also operating a mobile phone net in the Ukraine in conjunction with local partners.

The most ambitious move was made earlier this year when DeTeMobil paid DM586m to take 25 per cent in Satelindo, an Indonesian telecoms group which was awarded the archipelago's first mobile phone licence. Industry executives suggest DeTeMobil paid too much for the stake despite the strong international competition. DeTeMobil's investment could pay off because of Indonesia's dynamic economy and because its 17,000 islands are better suited to a mobile phone network than to fixed telephone networks.

Deutsche Telekom also holds a 30 per cent stake in Matav, the Hungarian telecoms operator, together with Ameritech, the US regional operating company.

هكذا من الأصل

Italy: The privatisation of Stet, the telecoms company, is perhaps the most eagerly awaited of all forthcoming state sales, reports **Andrew Hill**

Squabbles delay Stet sell-off

Simplification and restructuring still leaves three state-controlled companies

The Italian telecoms sector has been standing on the brink of important liberalisation for years. Within the last 18 months, however, a combination of internal and external pressure has pushed Italy's state-controlled telephone companies over the edge.

How well they survive depends on the managerial and technological skills of the companies themselves, but also on a number of variables: how strongly the Italian government (and parliament) push for liberalisation; the success of privatisation; and the judgement of partners and competitors about the prospects for further development of the Italian market.

It is still valid in Italy to talk about state-controlled telecoms companies in the plural, because in spite of recent simplification and restructuring, responsibility for Italian telecommunications is divided between three main companies. The main change has been the formation and stock market listing of Telecom Italia during 1994, following a merger between Sip, the quoted domestic operating company, and four other state-controlled companies.

At the time of the merger, Telecom Italia was the sixth largest telecoms operator in the world by turnover, which reached L29,100bn (£1,804bn) in 1994. In July this year, Telecom Italia demerged its highly profitable mobile telephony business into a separate company called Telecom Italia Mobile (TIM).

Both these companies are in turn controlled by Stet, the quoted telecoms holding company which also has investments in manufacturing (through Telsi, the name for the new company formed from Italtel and Siemens' Italian manufacturing interests); project planning and installation (Sirti); publishing, telematics and marketing (Seat); and information processing (Finsiel).

All three companies – Stet, Telecom Italia and TIM – are quoted in Milan, and Stet shares were recently listed on the New York Stock Exchange. Investors' attention has concentrated on Stet, however, because IRI, the state holding company, is planning to sell its 62 per cent stake in Stet either this year or next.

The privatisation of Stet is perhaps the most eagerly awaited of all forthcoming state sales in Italy. But the sell-off has been delayed by continued squabbling in the Italian parliament about the structure of the regulatory authority necessary to oversee the Italian telecoms sector.

The absence of a regulatory authority is certainly a handicap for telecoms companies operating in Italy – both Telecom Italia and its competitors. It means everyday disputes about tariffs, or the interpretation of particular regulations, have to be settled by bodies with more general powers such as the antitrust authority, government committees or, in the last resort, the courts.

Privatisation would give a strong psychological boost to Stet and Telecom Italia, but analysts believe liberalisation is more important than who owns the former state companies. As Mr Francesco Chirichigno, Telecom Italia's chief executive, said in a letter to employees last month, on the first anniversary of the company's formation: "Telecom Italia is an entrepreneurial reality which is healthy, technologically advanced, professionally competent and which is learning to compete in an open market."

Already Telecom Italia faces most of the European operators as direct competitors on the Italian market. At the moment, the likes of British Telecom and Cable & Wireless of the UK, Unisource, the European telecoms alliance, and AT&T of the US, are offering mainly business services, although they are all determined to challenge Telecom Italia across the board once liberalisation opens up voice services to full competition.

> Stet has been seeking a global alliance to crown a series of smaller investments overseas

A number of new joint ventures have also been formed, aimed specifically at challenging Telecom Italia's dominance in business services. BT has linked up with Banca Nazionale del Lavoro, one of Italy's biggest banks, to form Albacom, linking the British company's expertise with the bank's existing communications infrastructure. Olivetti, the Italian computer group, has formed Infostrada with Bell Atlantic, the US telecoms company, to offer business services.

Perhaps most importantly, Omnitel Pronto Italia – Italy's second operator of GSM digital mobile phones – is set to start operations before the end of the year, providing the first direct challenge to TIM's dominance.

Competitors are quick to point out, however, that in the absence of infrastructure liberalisation, these joint ventures still depend on lines leased from Telecom Italia, so their growth inevitably means more income for the state-controlled operator.

It also remains to be seen how solid the joint ventures are. As the Italian market develops, the structure of competition in Italy may change with rivals of Stet and Telecom Italia becoming allies, and vice versa. To a limited extent, this is already happening: for example, Bell Atlantic recently abandoned plans to take a stake in Stet's multimedia subsidiary in order to pursue its alliances with Olivetti.

In any case, Telecom Italia's historic dominance of the market will be difficult to shake. Even in relatively new areas, such as mobile telephony, the state-controlled companies' long-standing monopoly has allowed them to gain a head-start which it will be difficult for rivals to overtake. TIM, for example, was born earlier this year with a fully-fledged monopoly in analogue mobile telephone services, and a strong lead in GSM digital services, and now has more than 3m clients. No wonder its shares were among the strongest performers on the whole Milan stock exchange in their first month.

Telecom Italia and Stet are also seeking to take advantage of fast-moving technological developments, rather than counting on their traditional monopoly position. In May, for example, Telecom Italia surprised shareholders by announcing that between L12,000bn and L13,000bn of its investment over the next three years would be aimed at expanding Italy's fibre-optic cable network to reach 10m domestic customers by 1998. Telecom Italia has also signed a L330bn contract for the construction of an experimental broadband network for the transmission of advanced multimedia services.

Mobility in Rome: this couple pauses amid the city traffic allow the moped driver to make a call on his mobile telephone Picture: Sarah Murray

At the same time, Stet has been seeking a global alliance to crown a series of smaller investments overseas (in Cuba and Argentina, for example). At the beginning of August, Stet seemed to have found its partner when it signed a preliminary agreement with IBM, the US computer company. The agreement envisages a worldwide alliance aimed at offering business and private clients a range of sophisticated network services. It remains to be seen whether this will turn into the sort of global deal which Stet and Telecom Italia need to underpin their dominance of the Italian market. The deal is not exclusive – other partners are being sought – and at the time of writing, the alliance had not yet been formalised.

Anxious caller: stock brokers in Madrid struggle to find positions for their clients in a volatile market. On the telecoms front, too, the stage is set for a big battle in mobile telephone services Picture: Denis Coyle, AP

Spain: *EU liberalisation requirments will be met in full by 1998, reports* **David White** *in Madrid*

Telefónica comes full circle

Global ambitions focus on fast-growing Latin American markets

No one predicted 10 years ago, when Spain was gearing up to join the European Community, that its Telefónica group would become much of a force anywhere outside its home territory. But it is currently the biggest international player in the fast-growing telecommunications markets of Latin America.

Building up that position has been a calculated gamble in a bid to achieve the critical size it needs, and to compensate for the opening-up of what has, up to now, been a captive domestic market.

Telefónica is undergoing a rapid and difficult metamorphosis, from what was effectively a state-controlled monopoly, to a privatised market-oriented company in a competitive environment.

The change is a difficult one because of Telefónica's important place in the Spanish economy – it has a turnover equivalent to 2 per cent of the country's gross domestic product – and differing visions about both the pace of liberalisation and the government's future role in the sector.

An international share placement now in preparation is set to reduce the state's shareholding by 12 per cent to just under 20 per cent. The scale of the operation reflects a compromise between the positions defended in the Socialist government by Mr Pedro Solbes, the finance and economy minister, who favoured a larger sell-off, and Mr José Borrell, public works minister, who seeks to maintain a guiding state hand during the transition period. But the government stake in Telefónica, which since the 1980s has shrugged off its interests in manufacturing, is due in any event to be reduced to virtually zero by 1998.

The change is necessarily rapid because the Spanish authorities opted not to take up an extra five-year leeway they were offered by the European Union, and instead will comply with the January 1, 1998, deadline for full liberalisation of voice telephone services. Telefónica has up to now had a monopoly in the basic telephone business, with competition in some other services. Before opening up it needs to fill remaining gaps in its territorial coverage in Spain and – more problematically – complete an overhaul of its tariff structure.

The existing structure, with high long-distance rates subsidising relatively cheap local calls, would leave Telefónica in a vulnerable competitive position. Already last year, local call rates went up by just over 30 per cent, while most international tariffs were lowered. Analysts calculate that the rebalancing of rates to compare with other European operators will result in an overall reduction of 15 per cent in current terms and 25 per cent in real terms by the 1998 deadline.

The stage is set this autumn for the first big competitive battle, in mobile telephones. Telefónica recently launched the country's first digital mobile service to the GSM standard, MoviStar. In October, a second licensee, Airtel, a consortium venture including AirTouch of the US, British Telecom and Spanish financial partners, is due to start up. Airtel estimates the total Spanish market for mobile telephones, will grow to about 3.3m at the end of the century. This compares with a clientele of about 640,000 for Telefónica's original analogue service.

The next battleground is in cable television. A draft law on cable communications was approved by the government at the end of last year. The idea is to apply on a local scale the model used on a national scale

Continued on facing page

■ **The US:** Contention over telecommunications bill. By **Tony Jackson** in New York

AT&T squares up to the Baby Bells

Before the winners and losers can be identified, the market itself needs to be clearly defined

The US telecoms industry is on the brink of convulsive change – the biggest since the old AT&T was broken up a decade ago. Then, long distance and local telephony within the US were pulled apart. Now, by government decree, they are to be united again. The question is whether another telecoms monster will emerge.

The telecommunications bill now going through its final stages in Congress has proved contentious. The central question has been the terms on which the long-distance and local phone companies will be allowed to compete in each others' markets: and in particular, what the timing will be.

In its original form, the bill imposed fairly strict conditions on the local companies entering the long distance market. These companies – the Baby Bells – are the surviving monopolists of the old US phone system. They control local access to the customer, which gives them a substantial competitive advantage.

The original bill therefore said, in effect, that the Baby Bells had to have a local competitor on an independent network in their area before they could enter long distance.

After heavy lobbying, that condition was scrapped, so that the local and long distance companies will now be free to enter each others' markets almost immediately.

Some commentators have taken the view that this will free AT&T to gobble up the Baby Bells. It is, after all, much larger than they are individually. Its sales last year were $75bn (£46.8bn), almost as large as the seven Baby Bells put together (the largest, BellSouth, had sales of $16.8bn.)

Last month, At&T announced that it was spinning off its lucrative equipment business and its loss making computer arm, leaving a $50bn services business that still dominates the telephone sector.

Besides having deep pockets to fund its investment in local phone systems, AT&T has a strong brand name across the US. It is also the biggest cellular phone operator in the country, a fact which could become relevant as companies vie to become one-stop shops for all the phone requirements of the customer.

Against this, the Baby Bells have several strong cards. To begin with, they control the chief bottleneck in the telephone system, access to the local loop. At the same time, the level of competition in the long-distance market means substantial excess capacity exists, so that the Baby Bells are likely to be able to offer a total service quickly.

The long-distance companies, by contrast, may find local capacity hard to obtain, and may be obliged to build their own networks. In other words, the Baby Bells are likely to get a flying start: and in the race to sign up the customer, that could prove decisive.

The Baby Bells have another crucial advantage. Over half the long-distance calls originating in their areas – up to 70 per cent in some cases – also terminate there. Under the existing rules, a call from Atlanta to Miami, for instance, has to pass through a long-distance operator: but both cities are part of the BellSouth system.

As a result, BellSouth has to give up some 60 cents on each dollar to the long-distance operator, even though the call went from one of its customers

> US competition will not be limited to local and long distance phone companies

to another, using BellSouth's lines and systems. The long-distance company, of course, would retort that it has to give up 40 cents to BellSouth on a long-distance call, just for the privilege of gaining access to the local loop.

Under the new system, though, it seems clear the Baby Bells will be strongly placed to take much of that business away from the long-distance operators. There is the further prospect of amalgamation between the Bells, whether formal or informal.

Take, for instance, Nynex and Bell Atlantic, two neighbouring Bells which have been edging closer in recent months, notably with the combination of their cellular businesses into a joint venture. If those two were to combine in offering long-distance services, they would command the whole sweep of the Atlantic seaboard from Maine to Virginia.

But competition will not be confined to the local and long distance telephone companies. The cable TV operators, too, will be freed under the legislation to offer telephony to their customers, both wired and wireless. To an extent, this had been happening anyway, as a result of rule changes at the state and local level. But a change at the national level is of great strategic importance to cable industry leaders such as Tele-Communications Inc (TCI) and Time Warner.

Hello from Seattle: phone booths fill up as 3,000 sailors come ashore to phone home after nine US Navy ships arrived for a Seafair Festival Picture: AP

The most striking instance of this is the venture set up by three of the biggest cable companies – TCI, Comcast and Cox – with Sprint, the long-distance telephone company. In March, the partners said they would invest $4.4bn over three years on telephony.

Of that, $2.1bn has already been spent on mobile phone licences in the government's so-called PCS auctions earlier in the year, in which the consortium was the heaviest spender. However, there will also be large outlays on wired networks which will also offer multimedia services.

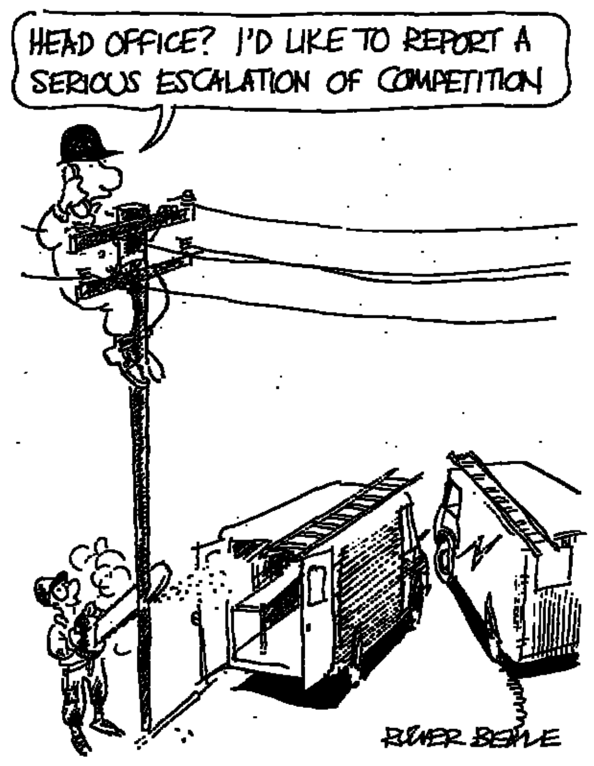
This is a further reminder that the winners in the changing world of US telecommunications will be those who most accurately foresee what mixture of services the consumer will want. Just as the cable companies are clubbing together to get into telephony, so the Baby Bells are getting together to challenge them in cable.

Thus, for instance, BellSouth, Ameritech and SBC Communications have got together with Disney in a consortium which plans to spend $500m over the next five years on developing new TV programmes which the phone companies can offer customers over newly developed cable networks.

Meanwhile, software companies, such as Microsoft, are prowling round the edges, looking for ways to exploit the convergence of the telephone, the TV set and the personal computer in the American home. Not only will it take time to identify winners and losers in the new markets: the markets themselves will take a while to become defined.

■ **Global partnership deals: plans by the three big US long-distance carriers, AT&T, MCI and Sprint.**

– See next page.



Telefónica enters global arena

Continued from facing page:

for GSM mobile telephones: two licences in each designated area, one for Telefónica, and the other auctioned off. Telefónica is already involved in cable TV in Chile and Peru.

In 1998 the company will face a competitor in basic telephony in Spain. However, a recent study by Banco Bilbao Vizcaya – one of the Telefónica's "core" banking shareholders – forecasts it will still have some 94 per cent of the market in 2005. According to the study, the number two operator is likely by then to control about 2.5 per cent, with cable operators accounting for just over 3 per cent. The overall business, it reckons, will have doubled from its present level to about Pta2,600bn (£13.5bn).

Growth potential on the Spanish market is an important factor in Telefónica's prospects. Although the number of telephone lines in service doubled between 1980 and 1994, to 14.7m, Spain's penetration rate of 37.5 per cent is relatively low compared with the main European or North American markets. In the most populous region, Andalucia, it is less than 29 per cent. In mobile telephones, Spain's penetration rate prior to the introduction of GSM services was a relatively meagre 1.7 per cent.

While continuing heavy investment at home, Telefónica has stepped into the international arena. In June it formally agreed to join the Unisource grouping with a 25 per cent stake alongside its Dutch, Swiss and Swedish counterparts at an overall cost of a Pta15bn. Initial plans to merge their data transmission business were dropped, however.

At the same time, Telefónica has been in lengthy discussions with both GTE and AT&T of the US, with the aim of taking on a partner in its international division.

The company's ambitions as a global operator have focused on Spanish-speaking countries of Latin America, although it also has interests in Portugal and Romania. With its experience of intensive line-installation programmes in Spain, it has taken advantage of recent telephone privatisations. Despite recent economic jitters in Mexico and Argentina, it is counting on rapid growth in these markets.

Since 1990, Telefónica Internacional, in which the Spanish government has a direct 24 per cent stake, has built up interests, primarily in Chile, Argentina, and Peru, and also in Venezuela, Colombia and Puerto Rico. It raised eyebrows by bidding a whopping $2bn (£1.2bn) in 1994 for a controlling 35 per cent stake in two Peruvian companies, now merged. But Mr Ignacio Santillana, managing of Telefónica Internacional, insists it was "a brilliant operation".

The company has been studying privatisation opportunities in Ecuador and Bolivia and possible entry to larger markets in Brazil and Mexico. Its TLD long-distance phone company in Puerto Rico, in which it has 79 per cent, is seen as a doorway into the US, where it plans to launch services in several eastern states. For Telefónica, a company which started out in 1924 under US control as a subsidiary of ITT, the move will mark a coming of age.

View from the top: By Robert E. Allen, chairman and chief executive of AT&T

Customers want more choice

New technology is empowering customers by giving them more control over how they use telecommunications services

It hardly qualifies as a prediction to say that the next four years should see continued growth and change in world telecommunications.

Telecommunications is the foundation of the global information industry that is a $1.5 trillion market right now, and should be worth twice that within the next ten years.

The well-established marriage of communications and computing will continue to move us towards the kind of interactive, multimedia services that Europeans associate with the term 'Information Society' and Americans call the 'Information Superhighway.'

The current boom in telecommunications infrastructure will continue for at least the next four years, and probably well beyond.

Wireless communications, the fastest growing segment of the telecommunications industry today, will continue its rapid expansion. As the technological capacity of wireless expands and costs fall, it should emerge in many places as a basic part of communications infrastructure. Perhaps the most significant change of the near future will be the change in the long-standing connection between telecommunications and the public interest.

For most of the last century, the public interest was defined by the providers of telecommunications. But in the near and long-term future, the public interest will be defined by the public itself.

The promise of market liberalisation is making customers restless for real competitive choices. Led by the world's multinational corporations, customers will increasingly expect state-of-the-art technology delivered in a competitive marketplace with all the associated benefits of choice and price.

The winners in the global telecommunications market will be those providers and public policy-makers who commit themselves to meeting customer expectations, rather than clinging to the traditional monopoly market model that is slowly sinking under its own weight.

Monopoly telecommunications providers, with their high-cost structures and inflated prices, are ill-equipped to meet the expectations of multinational corporations and other customers looking for innovative and reliable service at the lowest possible cost. No-one is more aware of this than the monopoly providers themselves. As the prospect of significant competition comes into sharper focus, the next few years could see monopoly national services providers make substantial changes to expand services and push down costs. Fear of the real and perceived difficulties of making such a transformation have caused national regulators in many countries to delay and inhibit the inevitable arrival of real competition.

Robert Allen: 'Customers want competitive choice . . . the global telecoms industry simply cannot ignore their expectations'

These fears are understandable, but unfounded. The experience of the US long-distance market proves that healthy competition delivers benefits not only for customers, but for the industry and the general economy as well.

Long-distance competition accelerated in America with the break-up of the old Bell System monopoly (of which AT&T was the parent company) in 1984. In the following 10 years, long-distance prices decreased 66 per cent and new services have proliferated as customer choice stimulated the marketplace. Volumes are at record levels, and the long distance business remains an attractive and profitable market.

Similarly, prices dropped substantially and services improved in Britain following the privatisation of British Telecom and in anticipation of competition. The UK market is still too dominated by BT to be called competitive, but the competitive initiatives underway in Britain have already translated into benefits for business and residential customers. Speaking from the perspective of AT&T, a former monopoly provider, I can say without reservation that the vibrant competition in the US long-distance market has made us into a stronger, more customer-focused company. In the coming years, competition could very well have the same effect on the state-sponsored monopoly companies in other countries.

The stage has certainly been set to put that idea to work over the next four years, most prominently in western Europe and the United States.

The European Union has announced its intention to open its national telecommunications markets to competition in 1998. As I write this, the US Congress is in the final stages of adopting a sweeping new communications legislation that would open up local telecommunications service in America to competition.

In both the EU and US, the commitment to these pro-competitive intentions will be measured by how vigorously they are translated into marketplace policy. If the EU wants a competitive telecommunications market in 1998, the time to start liberalising market-entry is now. Economies in Europe and elsewhere can ill-afford to wait three years for the service innovations and lower costs that competitive markets can bring.

Given the complexity of the technology and the enormity of the task of providing fundamental services (as opposed to specialised private line services that are already open to competition in some countries), it is likely to take competition several years to take root even after the political barriers come down.

Introducing competition in any telecommunications market will require the co-operation of the existing monopoly providers and an independent regulator to make sure that the rhetoric of open markets is translated into reality.

It is a reality that customers well understand. They want the benefits of competitive choice. Their expectations have been raised – and the global telecommunications industry simply can not ignore them.

US global partnership deals: Important new groupings are emerging, reports **Tony Jackson** in New York

Big carriers a-wooing go

The goal now is to provide multinational corporations with a single compatible world-wide system for voice and data

The three big US long-distance carriers, AT&T, MCI and Sprint, have each adopted a slightly different approach to global competition.

MCI has formed an alliance with British Telecom; Sprint is in the process of tying up a deal with Deutsche Telekom and France Télécom; AT&T – depending on one's viewpoint – is either operating through a looser series of alliances in Europe and the Far East, or going it alone.

The logic of these groupings is derived not only from the strategy of the US companies but – perhaps more importantly – from that of of foreign companies which are seeking access to the US market. The chief purpose of global networks is to serve global corporations. A disproportionate number of these are US-based and the proportion of global traffic originating from the US is variously estimated at between 25 per cent and 40 per cent.

Expanding US network: telephone engineers laying cable in New York City — Picture by Glyn Genin

Europe is the other crucial area for multinationals, with Asia – excluding Japan – a much more fragmented marketplace. The chief priority for both US and European telephone companies has thus been to secure a transatlantic partner.

Mr Alain Lebec, joint head of telecoms investment banking at Merrill Lynch in New York, points out that whereas there are only three big US long-distance companies, Europe has far more players. For a bevy of European suitors, he says, "the dance was on for US partners."

AT&T, he argues, was ruled out since its size made it "the 800-pound gorilla". In revenue terms, AT&T is bigger than Deutsche Telekom and France Telecom together and almost four times the size of BT. Even after the divestment of its computing arm and equipment manufacturing operations, it is still a behemoth among carriers. No European company could enter an alliance with AT&T and be assured of equality.

That made MCI the most attractive target, as the next biggest but of manageable size. Deutsche Telekom and France Telecom are thought to have been close to doing a deal in mid-1993. Instead, British Telecom stole MCI from under their noses, paying $4.3bn for a 20 per stake – the maximum allowed under US regulations.

Sprint was thus the only US partner left. Within a year – by mid-1994 – Deutsche Telekom and France Télécom had snapped it up as a consolation prize, with a similar 20 per cent stake. (The deal has been largely cleared by the US authorities, but awaits consent from Brussels.) That alliance has been hotly opposed by AT&T, on the grounds that the German and French telecoms markets are still largely closed, and that lack of reciprocity makes the deal anti-competitive. Brussels is likely to impose conditions, but to let the deal through eventually.

AT&T made no such objections to the MCI-BT alliance. But since the UK telecoms market is wide open, that means only that AT&T had no grounds for complaint, not that it was happy with the deal.

AT&T's own arrangements include Uniworld, a joint venture with Unisource, which is in turn a venture formed by the telephone companies of Switzerland, Sweden and the Netherlands. It has also formed WorldPartners, a loose alliance with Singapore Telecoms and KDD, the Japanese long-distance company.

In settling for less formal groupings, often non-exclusive in nature, AT&T may be making a virtue out of necessity. How far this strategy will succeed against the more committed partnerships in which MCI and Sprint are involved remains unclear.

This may partly depend on what alliances can be fixed up in Asia. Japan apart, the Asian economies are much more fragmented, and are home to few truly multinational companies. They are, however, hugely important as growth markets for multinationals elsewhere.

The likely answer, says Mr Lebec, is for local Asian alliances to be formed, centred on Singapore, Hong Kong or even Australia. "The need is for European and American companies to access Asia," he says. "So far, no-one in Asia has the weight to provide that, so a local alliance is a more logical evolution," he adds.

How remunerative these global alliances will prove is perhaps another matter. Multinationals, such as Unilever or General Motors, which need to communicate across a myriad of international subsidiaries, are already highly experienced in telecoms.

The ability to offer them a single compatible world-wide system for voice and data is, of course, attractive but equally, these companies can drive a hard bargain, especially among active competitors. And, given that the new telecoms alliances will have high start-up costs to cover, from installing networks and leasing facilities to getting agreement with local telephone companies, competition for high-volume business is likely to be correspondingly intense.

There is one further imponderable. At some point, the Internet will presumably become sufficiently global – and sufficiently secure – to form the basis of a communications network for some corporations, or at least some of their traffic.

In that case, the problem for the telephone companies will be two-fold. They need to differentiate their own services enough to make sure they are not reduced to commodity status, and above all, they need to work out how to collect a more respectable toll for Internet traffic passing over their wires.

But on the whole, it seems unlikely that there will be winners and losers among the US long-distance companies in their global operations. Rather, there will be winners and bigger winners.

After all, the US is the home of the information revolution. As such, it retains the lead in a number of crucial technologies and applications. Considering the potentially ferocious battle the US long-distance companies face in their deregulated home market, they are wise to make the most of their advantages overseas.

Nortel: *Manufacturer profile.* By **Bernard Simon** in Toronto

Strategy pays off with record orders

In the area of networks, Nortel has big ambitions beyond North American boundaries

Northern Telecom unveiled a new corporate slogan earlier this year to celebrate its 100th birthday and to hammer home the transformation that has taken place at the Canadian telecommunications equipment supplier.

The slogan – "A World of Networks" – is a formal acknowledgment that the big phone switches which put Nortel on the map in the 1970s and 1980s are gradually taking a back seat to the transmission equipment, wireless products, software and satellite applications used to build sophisticated telecommunications networks.

The strategy has paid off, so far. From an $884m (£552.5m) loss in 1993 (much of it made up of restructuring charges), Nortel has rebounded to record earnings of $79m in the second quarter of this year. Order inflows between April and June, totalling $2.55bn, were also at record levels.

Nortel (Northern Telecom), working with BT and Sovintel, the Russian telephone operator, has established the first end-to-end ISDN (Integrated Services Digital Network) connection between Russia and the UK

RBC Dominion Securities of Toronto noted in a recent report that the turnaround has been quicker than expected. Nortel's share price has almost doubled in two years, trading at about C$50 on the Toronto stock exchange in late August.

Central office switches make up about 40 per cent of Nortel's sales, down from 51 per cent in 1989. Meanwhile, the contribution of wireless products has grown from 3 per cent to 15 per cent. "The switching business is going to grow less for us than the growth of the company," says Jean Monty, who has overseen a top-to-toe shake-up at Nortel since he took over as chief executive two years ago. "More and more you see us evolving towards offering solutions, as opposed to just offering boxes."

Nortel has also retreated from cable manufacturing. It has sold the submarine cable division of STC, the UK telecoms equipment group which it bought in 1992, and disposed of a large fibre-optic cable factory in Saskatchewan.

But in the area of networks, says Mr Monty, "there's no limit to what we will want to do – design, build, finance . . ."

As an example of his ambitions, Mr Monty cites a recently-completed turnkey contract with Energis, the UK power distributor. Nortel spearheaded the installation of a fibre-optic telecommunications network in which cable was wrapped around the earth wires of existing power lines. It also supplied a range of equipment, including a DMS-100 public switch.

Mr Monty's strategy also includes a drive to step up Nortel's presence outside North America. The central office switching business was centred on the US regional phone companies and Bell Canada. (Both Bell Canada and Nortel are subsidiaries of BCE, the Montreal-based telecommunications conglomerate.)

> Nortel is evolving as a 'solutions' supplier

As recently as 1989, North America contributed 95 per cent of revenues. That dropped to 67 per cent last year, thanks to expansion in western Europe, Asia (especially China) and Latin America. British Telecom is now among Nortel's biggest customers.

Nortel bought a 50 per cent stake in France's Matra Communications in 1992, giving it a window on wireless equipment using the predominantly European GSM standard.

Earlier this year, it formed a joint venture with Germany's Daimler Benz Aerospace (Dasa). The deal was conceived partly to give Nortel a toehold in Germany ahead of deregulation of the telecoms market there. An added attraction however, was Dasa's expertise in satellite communications.

Most recently, Nortel forged an alliance with Illinois-based Antec, which specialises in broadband network products for cable-TV. The two companies' first joint venture will aim to integrate voice, data and interactive video on a single network for cable-TV and phone services.

One of Nortel's few remaining peripheral investments is its 17 per cent stake in ICL, the UK computer group, which it acquired as part of the STC acquisition. Mr Monty says he is still unsure what will become of the ICL interest, but considers it a good investment for the time being.

Corporate culture

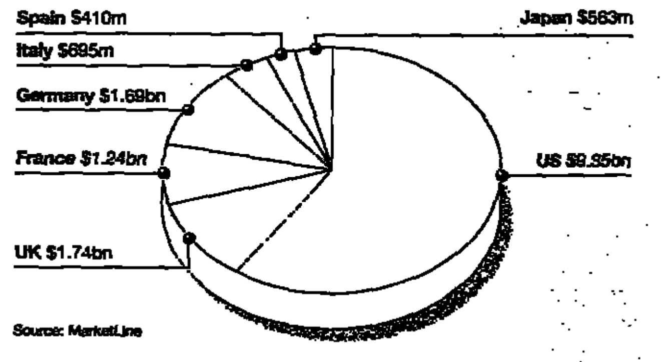
Nortel's corporate culture has also changed in recent years. Mr Monty's predecessor, Mr Paul Stern, was a brash American computer industry executive who moved Nortel's centre of gravity towards the US. Mr Monty, a French-Canadian, is more conservative. He has reluctantly allowed his lieutenants to wear casual clothes at the office, but has no intention of following suit.

Since taking the reins, Mr Monty has re-established Toronto as the undisputed head office. He has delegated more authority to product and regional managers.

However, Mr Monty is concerned Nortel has been hiding its light under a bushel. He acknowledges that "we haven't articulated our vision well enough to our customers, our shareholders or our employees." The company is likely to promote itself more vigorously in the coming year.

Global datacoms market by country

1994 total $15.7bn (1990 total $8.1bn)



Source: MarketLine

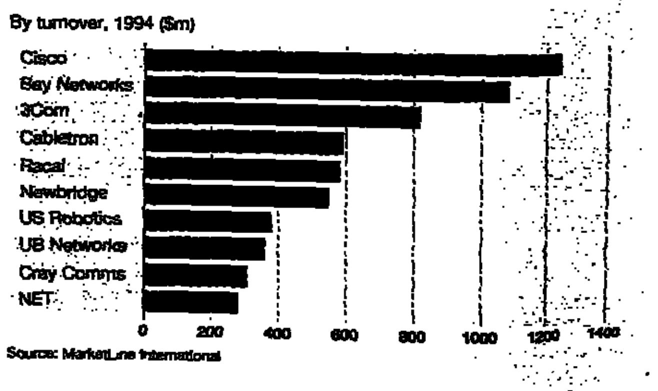
Forecast global value of the datacoms market, 1995-2000

1993 ($m)	Market value	% growth
1995	18,510	17.9
1996	20,873	12.8
1997	23,072	10.5
1998	24,828	7.6
1999	26,331	6.1
2000	27,773	5.3

Source: MarketLine

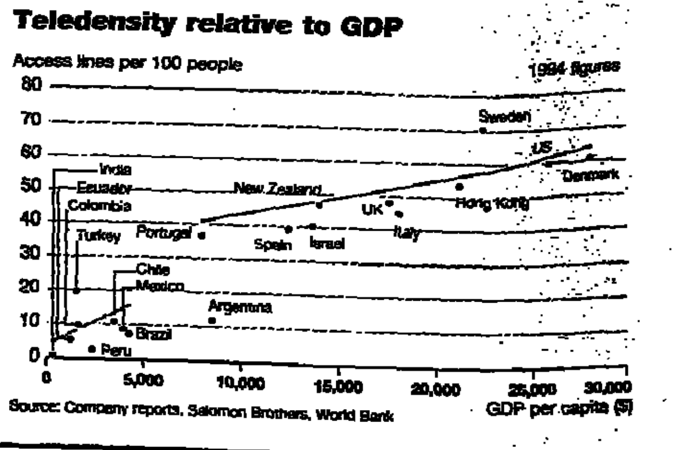
Top ten global datacoms manufacturers

By turnover, 1994 ($m)



Source: MarketLine International

Teledensity relative to GDP



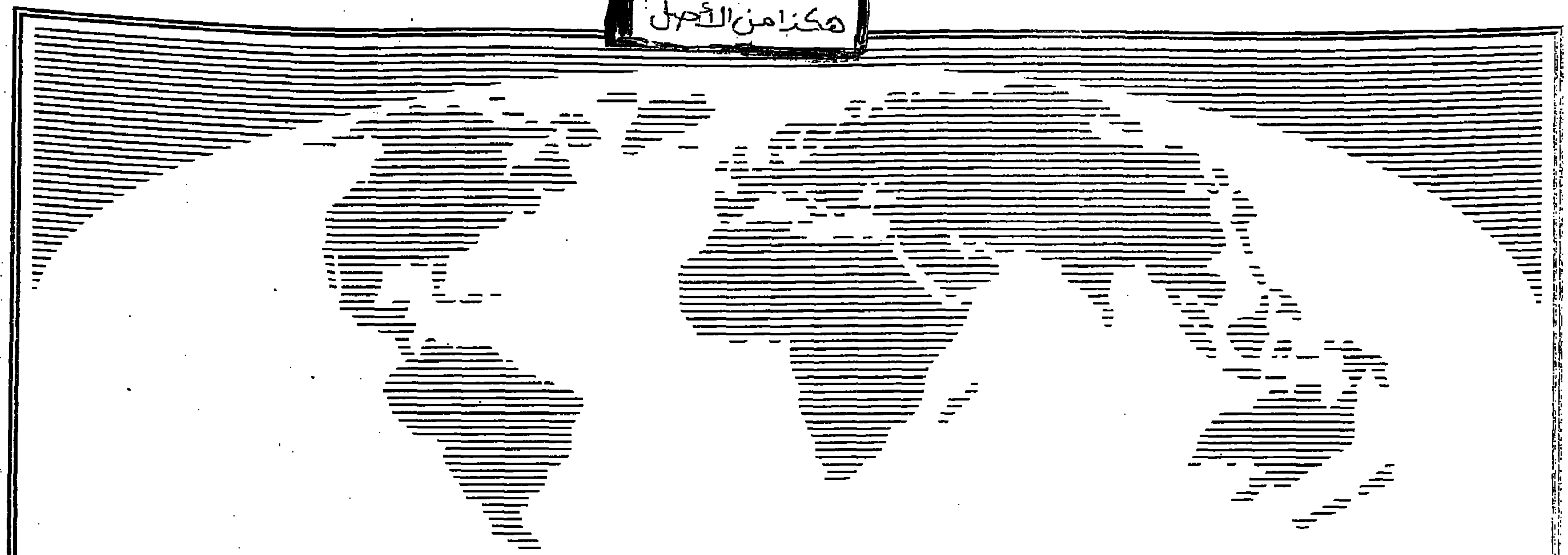
Source: Company reports, Salomon Brothers, World Bank

Forecast value of the datacoms market by country, 1995-2000 (1993 $m)

Country	1995	1996	1997	1998	1999	2000
US	11,100	12,220	13,155	13,805	14,320	14,700
UK	2,010	2,257	2,492	2,684	2,839	2,974
France	1,412	1,611	1,812	1,994	2,140	2,292
Germany	1,953	2,291	2,625	2,911	3,162	3,422
Italy	798	923	1,070	1,198	1,290	1,387
Spain	512	591	676	756	834	905
Japan	726	980	1,242	1,483	1,746	2,053
Total	18,510	20,873	23,072	24,828	26,311	27,733

Source: MarketLine

هكذا من الأصل



■ **Mexico:** Phone call revenues with the US are worth $2bn a year, reports **Leslie Crawford** in Mexico City

Countdown for a $7bn market

A new telecoms law has set the framework for newcomers to the industry

The eagerly awaited deregulation of Mexico's $7bn telecommunications market begins in January 1997.

Most of the leading US participants – AT&T, MCI, GTE, Sprint, Motorola, Teleglobe and Bell Atlantic – have already forged strategic alliances with Mexican partners in readiness for the opening of Mexico's long-distance telecommunications. European carriers have not become involved, largely because 80 per cent of Mexico's international calls are made to the US.

Call revenues between Mexico and the US, estimated at $2bn a year, are the biggest between any two countries in the world.

Teléfonos de México (Telmex), privatised in 1990, will lose its monopoly over domestic trunk calls and international traffic when the sector is deregulated in 1997. Telmex, with more than 9m customers, is expected to remain the dominant carrier, although it has also struck an alliance with Sprint of the US to prepare for increased competition.

A new telecoms law approved by the Mexican congress in May has set the framework for newcomers to the industry and given Telmex and its many would-be competitors their first glimpse of what the industry might look like after 1997.

Consortiums will have to be majority Mexican-owned. Concessions will be granted for an initial period of 30 years. Satellite communications will also be opened to private investment. Carriers will be free to set their own tariffs – only Telmex, the dominant carrier, will have its rates capped by the government for six years.

Providers of local wireless telephony will have to bid for space in the radio spectrum in public auctions. But to the delight of those planning to build fibre-optic or cable networks, there will be no licence fee to pay.

The law also states that interconnection fees are to be freely negotiated between Telmex, the dominant carrier, and its competitors. If the parties fail to agree on a fee, the Telecommunications Ministry will be the final arbiter.

US carriers and their Mexican partners will be watching closely when Telmex sets interconnection fees for its own affiliates for the first time in September. They are expected to set the benchmark for the industry.

A stock market trader in Mexico City makes a cellular phone call while keeping a watchful eye on market monitors

The bylaws that will govern key aspects of the industry, however, have yet to be published. These include regulations that will settle issues such as rights-of-way for fibre optic networks, and arbitration rules to settle disputes between carriers. MCI (with its partner Banamex, Mexico's biggest bank) have been awarded a licence to provide long-distance services. They were the first to apply for a concession in July and did so without waiting for the bylaws or knowing what interconnection fees Telmex would charge for piggy-backing onto the local network.

"We applied for the concession because the new telecom law has given us enough guidance and confidence to proceed," says Mr Dan Crawford, chief operating officer of the MCI-Banamex venture, named Avantel. The partners plan to spend $800m in the first phase of their telecommunications project, which will include laying down 5,300km of fibre-optic cables to link the country's three main cities – Guadalajara, Monterrey and Mexico City.

Other telecoms companies have chosen to wait for the publication of more detailed regulations, which they say are necessary for the completion of their business plans. The government has repeatedly postponed the announcement of the telecoms bylaws, which are now expected towards the end of the year.

"Time is running out," says Mr Arturo González Arquieta, head of a joint venture between Bancomer, Mexico's second-largest bank, and GTE. "We are already one year behind schedule. We are being asked to present business plans without knowing the rates Telmex will charge for connecting to the local network. To do so, we need guarantees that the government will be a good arbiter with the clout to force Telmex to set fair inter-connection charges." He points out that Mexico's attempts to regulate competition have been feeble to date.

Mr Peter Hutchison, financial director of Grupo Alfa, a Mexican steel, petrochemicals and food conglomerate which has joined forces with AT&T, says: "Interconnection charges are a critical issue for us, as the level at which they are set will largely determine the profitability of our investment." Alfa and AT&T plan to invest $1bn over the next few years on their own fibre-optic network.

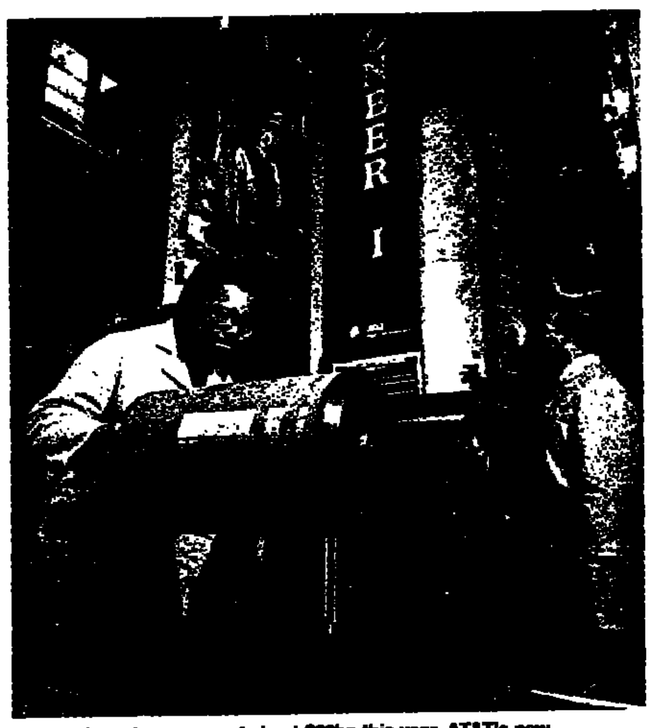
Banamex and Bancomer both say they are going ahead with their telecoms ventures despite Mexico's economic crisis, which has hit the domestic banking industry particularly hard. Mexico's two largest banks already have embryonic telecoms networks linking their branches in more than 250 cities, and a large customer base.

Given that newcomers are expected to focus on the most lucrative segments of the market – corporate customers in Mexico's biggest cities – the government plans to continue subsidising the development of local telephony in rural areas.

"Contracts will be put out to tender," says Mr Carlos Casasus, under-secretary at the Telecommunications Ministry. "The winner will be the operator who requires the smallest subsidy."

Telmex, meanwhile, is gearing up for competition. It is adjusting tariffs which at present exploit its monopoly over the long-distance market to subsidise local calls.

Mexico's economic debacle, however, has forced the company to halve its investment budget this year to $1bn. It has formalised an alliance with Sprint, to carry each other's long-distance traffic and to offer a broad range of services including data transmission and calling credit cards.



With projected revenues of about $22bn this year, AT&T's new equipment company will inherit a broad array of products. Pictured here is experimental optical fibre production at Murray Hill, New Jersey

■ **US giant's new equipment division**

AT&T's break-up is widely seen as a 'divide and conquer' strategy

The newly-formed equipment business will now have freedom to compete more aggressively in the equipment market, writes **Louise Kehoe**

AT&T's plan to split itself into three separate companies by the end of next year will unleash the world's largest manufacturer of telecommunications equipment to compete as an independent entity.

With projected revenues of about $22bn this year, the stand-alone equipment company will inherit an array of products ranging from network switching equipment and optical fiber transmission lines to home telephones and personal computer modems.

The new company will comprise AT&T's Network Systems Group with annual revenues of about $12bn which makes large network switches, transmission equipment and fiber optic cables; Global Business Communications Systems which makes office products such as private branch exchanges, voice mail systems and telephone handsets, with revenues of about $6.5bn; the Consumer Products division, a consumer telephone producer with annual revenues of about $2bn; AT&T Paradyne, best-known for computer modems; and Microelectronics, a $1.2bn chip manufacturer.

Research arm

The as yet unnamed equipment company will also house the world reknowned Bell Laboratories as its research and development arm, placing it at the leading edge of rapid technology changes.

Bell Labs' inventions include such fundamental breakthroughs as the transistor and the Unix computer operating system. The laboratories filed 25,000 patent applications last year.

As an independent company, the spin-off will be free of conflicts that have recently become a significant barrier to the growth of AT&T's $12bn Network Systems division.

Although US regional telephone companies are spending billions of dollars annually to upgrade their networks to enter long distance markets and provide multimedia services, some have been reluctant to buy equipment from their future rival.

The Network Systems division's sales growth fell sharply this year, according to industry analysts, from about 17 per cent in 1994 to less than five per cent in the first half of 1995. Competitors, meanwhile, gained ground. Northern Telecom, for example, has seen a surge in orders for network equipment this year.

"Network Systems has suffered guilt by association " with AT&T's telecommunications services businesses, said Mark Winther, vice president of worldwide telecommunications research at IDC/LINK, a US market research group.

The AT&T network equipment division "has labored mightily to maintain a Chinese wall" between its external customers and AT&T's own communications services division, he noted. "But the inherent conflict of interest , which . . . competitors have emphasised, is undeniable."

The break-up will "ease one of the most troubling conflicts within the telecommunications industry," said Bob Barada, vice president of corporate strategy and development at Pacific Bell, a US West Coast regional telephone company.

"For more than a decade, AT&T has been Pacific Bell's largest supplier and its most formidable competitor," said Mr Barada. "Consequently, Pacific Bell has been forced to rely on its major competitor for the majority of its equipment. That's never been a comfortable situation."

Such sentiments appear to have been one of the primary motivations behind AT&T's decision to split itself into three separate companies. In a letter to employees, last month, Bob Allen, AT&T chairman explained: "It is no secret that our Network Systems business has been affected by the conflicts that our Communication Services Group has been having with the RBOCs (Regional Bell Operating Companies), both in the public policy arena and increasingly in the marketplace."

"These conflicts foreshadow similar issues with some PTTs around the world," said Mr Allen. "In recent months, it has become clear that the advanges of our size and broad, diverse product line are starting to be offset by the amount of time, energy and expense it takes to manage conflicting business strategies and coordinate activities across a large, complex enterprise."

"Our services and systems businesses are at the intersection of tremendous change and opportunity," said Mr Allen. "This restructuring ensures that each can follow the path of greatest opportunity without worrying about bumping into each other along the way."

Competitors

There are, however, potential drawbacks to the break-up of AT&T. In the equipment sector, for example, whereas the newly independent equipment company stands to win customers that have been reluctant to buy from a competitor, it will in future have to compete for the business of its current sister division – AT&T Communications Services.

What is more, over the next 15 months the disruption of the break-up could detract from the abilities of the newly-formed companies to compete. Large scale layoffs are anticipated as AT&T eliminates the jobs of people involved in managing the complex relationships among its different divisions.

Although the company has so far declined to provide details, analysts predict that tens of thousands of people will be made redundant as a result of the AT&T breakup.

Moreover, while the Network Systems portion of the new equipment company stands to benefit from its disassociation with AT&T, the world famous brand name has been a powerful selling point for the company's consumer telephones, an approximately $2bn a year business.

Yet to be determined is whether the "new AT&T" will lend its name to these products. Nonetheless, AT&T's break-up is widely seen as a "divide and conquer" strategy that will give its telecommunications equipment business the freedom to compete more aggressively in the telecommunications equipment market.

Telecoms solution for remote regions: Inmarsat-M briefcase satellite telephones can serve as public payphones in rural areas, such as this one at the Cocos Island National Park, off the coast of Costa Rica. For more reports on satellite communications, see part two of this survey – page 37

■ **Brazil:** The reformist government wants to open up the telecom market, reports **Jonathan Wheatley**

A cellular market 'ready to explode'

The reformist government of President Fernando Henrique Cardoso wants to open the network to private sector competition

Brazil's chaotic and inefficient telecommunications system is about to be overhauled.

After three decades of government control and bureaucratic management, the network can no longer supply the demands of its customers. Anyone who wants a line quickly in São Paulo, for example, must go to the parallel market, where they can either buy one for up to R$5,000 or rent one for about R$150 a month.

The present situation has its roots in the 1960s, when the government made clear its role as a provider of telecoms services. Since then, the network has gradually moved into government hands. In 1988, some 26 local operating companies were grouped under a holding company, Telebrás. Long-distance and international services became the monopoly of Embratel, a company which by law must be entirely owned by the government.

All this has started to change. The reformist government of President Fernando Henrique Cardoso wants to open the network to private sector competition. Constitutional changes passed in August end the government's virtual monopoly in the industry (one small private company, CTBC, survives from the days before nationalisation).

New, added-value services such as cellular telephones and data transmission should soon be auctioned to private contractors.

Later, the operating companies could even be sold. The process will take time, but it should deliver vast improvements in the existing network and offer attractive opportunities for providers of equipment and services.

The biggest failure of the public-sector system is its inability to generate investment capital and therefore to meet growing demand for services. Most of the blame for that lies with the system's tariff structure, which subsidises local services at the expense of long-distance and international calls. Standing charges and tariffs for local calls are so low that many local services run at a loss.

"The key question for the future of the conventional telephone system is tariffs," says Ana Novaes, an industry analyst at Brazilian investment bank Garantia.

"All emerging market networks have used long-distance calls to subsidise local calls. All of them had to restructure tariffs before privatisation."

The present structure does little to encourage efficiency. Companies which make money on long-distance and international calls have to pass this revenue to Embratel, which then shares it out among other companies in the network.

According to a study prepared by Garantia, residential standing charges in Brazil are less than a tenth of international levels; local calls cost less than a third of the world average, while international calls are about 70 per cent more expensive.

Ms Novaes says the cost of international calls will have to fall to prevent the drain of revenue currently caused by "call-back" services operated by foreign telephone companies.

The communications ministry's investment plan to the end of 1998 (the end of the present administration) says the industry should, among other things, double the number of conventional telephone lines from the current 14m, and increase the number of cellular lines from 800,000 to 3m. Over the following four years, it says conventional lines should increase to 38m, and cellular lines to 12m.

The ministry says the first stage will cost R$34.6bn. That is the amount of investment capital the public sector would generate over four years if tariffs were adjusted to international levels. But because the present tariff system will generate just R$12bn, the ministry hopes the private sector will provide the rest.

The government is in a hurry to adjust tariffs for two reasons: the network needs the money, and it will be difficult to sell the companies without adjusting tariffs first. It hopes tariffs can be reorganised by the middle of next year.

A change in tariffs, though, faces political obstacles. Not only will raising local tariffs be unpopular, it will also have a distorted impact on inflation indices.

Any significant change in local tariffs and standing charges would show up in inflation. But long-distance tariffs and rents on the parallel market – which will disappear once the industry can meet demand – are not measured by the indices. Raising basic charges by about 1,000 per cent will be difficult for a government that was elected on its anti-inflation policies.

Privatising the telephone companies will meet even stronger political resistance. While there is probably a majority in Congress in favour of private-sector management of the network, the companies are a popular source of patronage at many levels of municipal and state government.

Delays can also be expected in preparing new regulations for the industry. The constitutional changes ended the government monopoly but also stated that supplementary laws covering the industry must be passed by Congress.

"The real problem with the new regulations won't be getting them through Congress," says Ms Novaes. "It will be drafting good regulations in the first place. Brazil hasn't had a regulated private telecommunications industry for over 30 years."

With so many pitfalls ahead, the government is likely to move first on less contentious, value-added services. Thanks to a grey area in the constitution, cellular networks could probably be opened rapidly. But the government is more likely to wait until supplementary regulations are in place before opening tenders.

A change in tariffs faces political obstacles

Even so, the first contracts are expected within the next 12 months.

There is plenty of demand to be met. In the state of São Paulo there are about 330,000 cellular lines in use. Another 1.5m would-be subscribers are on a waiting list at Telesp, the state telephone company.

"The market is ready to explode," says Ethevaldo Mello de Siqueira, editor of specialist magazine Revista Nacional de Telecomunicações. "Any newcomer could set up an 0800 (toll-free) number for registrations and watch the customers come in."

The potential earnings for service providers are equally impressive. "For each of its cellular lines, Telesp bills around US$100 a month in rental and call charges," says Mr Siqueira. "In the United States, companies bill around US$70."

No doubt charges will fall in a competitive market, but Mr Siqueira says they will stay above international levels for some time.

The big prize in the future, after the sale of the state operators, will be private access to international services. However, Sérgio Motta, communications minister, is ambivalent about selling Embratel. He says it has a strategic role, and if sold would need three to five years to prepare for competition.

But if the sector is opened up, the prospects for growth are enormous. Mr Siqueira says Brazil should learn from long-distance operators in Chile.

"Even with the lowest international tariffs in the region, Chile has nine long-distance operators, all making money," he says. "As the tariffs go down, the volume goes up. And it keeps on going up."

Brazil has a long way to go before it catches up with competitive telecoms markets overseas. But at least the process has begun.

Always busy: public payphones in Buenos Aires, Argentina

'THE OLYMPICS OF THE TELECOMS WORLD'
Record numbers of visitors are expected at Telecom 95 in Geneva, Switzerland. The event, from October 3-11, has attracted the largest-ever number of telecom companies, and is sponsored by the United Nations affiliated International Telecommunications Union, the ITU. The Geneva show has been described by the press as *'the Olympics of the telecommunications world – a place where reputations can be made or lost.'* It a world showcase for all that is new in telecom products and services. The previous Geneva event, held four years ago, attracted 132,000 visitors.

■ **Mobile communications:** The cellular phone is the driving force of the business, reports, reports Alan Cane

Early promise surpassed

Demand for mobile communications has provided an unexpected windfall for traditional telecom operators

The global cellular phone industry is more than fulfilling its early promise, justifying claims of "truly explosive" growth. While elsewhere such claims could be industry hyperbole, the falling costs of *handsets and services and* openly competitive markets has unleashed huge, pent-up demand for mobile telephony.

Mobile communications, of course, covers a broad range of systems from increasingly sophisticated personal pagers, able to deliver text messages in addition to audio signals, to *high speed data transmission* equipment. But the cellular phone remains the centrepiece of the business and its principal driving force.

According to Dataquest, the market consultancy, some 27.9m portable phones were shipped worldwide in 1994. It expects the number shipped yearly to expand to 99.84m by the turn of the century.

Dataquest attributes this to *lower unit cost, a growing consumer market* and increasing standardisation: "Leading suppliers of cellular phones are poised to take advantage of a subscriber base expected to grow nearly five fold to 251m by the end of the decade," it says.

The leaders in the supply of *handsets and base stations* are Motorola of the US, Ericsson of Sweden and Nokia of Finland. These three companies have about 70 per cent of the global market for mobile handsets. All have seen their share prices soar in recent months as *investors become aware that* although the growth of cellular telephony seems remarkable, it is still a long way from a commodity market. There is plenty of room for further, spectacular growth. Ericsson, for example, predicts there will be 350m subscribers world wide by 2000.

The numbers for mobile *services as opposed to equipment* are equally impressive. Between 1993 and 1994, the business *grew* 62 per cent in the UK, 84 per cent in Denmark and 106 per cent in Portugal. According to the consultancy Mercer Management Consulting, the *increase in* demand for mobile communications has provided an unexpected windfall for traditional telecommunications operators.

"At a time of modest revenue growth rates in the traditional operator's core businesses and uncertainty in international ventures, mobile services have shown the capacity to sustain 30 per cent or greater revenue growth rates, year after year," it points out.

AT&T, the largest US telecoms company, and the inventor of cellular telephony got out of the business in 1984 believing the market would be too small to be profitable. Last year it bought McCaw Cellular, another pioneer for $11.5bn which makes AT&T the unchallenged leader of mobile *telephony in the US.*

It is, however, also a time of transition for the industry, bringing with it a number of challenges that have to be resolved.

● The greater part of the expansion of the mobile phone market is expected to take place in the residential sector. *The early adopters of mobile* phone services were businesses; they could justify high *prices in terms of the value of* the service to their operations and were able to write off the cost as a business expense. In developed countries, at any rate, this market is essentially saturated.

Residential users, on the whole, are likely to prove less satisfactory customers. They *use the phone less than business* customers and are more sensitive to pricing. "Churn" *rates – the proportion of customers* leaving the network or being excluded for one reason or another – are higher for residential than business customers. And as mobile phone become ubiquitous, the dangers of theft and fraud grow.

● *Migration* from the older, analogue to digital technology – computer language – is *accelerating. There are powerful* advantages in digital telephony. Systems are less sensitive to fraud, transmission quality is improved and capacity at specific wavelengths is increased.

Battle looming

There is, however, an equally powerful battle looming over standards. The *European standard for digital telephony* is Global System for Mobile communications (GSM). With some 6m subscribers already using the system, it is the leading digital wireless technology, used throughout Europe, large areas of Asia and elsewhere.

It is not, however, the technology of choice in the important US market where analogue networks still *predominate.*

There has been a lot of excitement in the US about a technology called CDMA (or code division multiple access) which is said to have advantages over existing standards, such as GSM.

Keith Woolcock and Simon Carrington, telecoms analysts with the brokers Smith New Court in the UK have pointed *out that shares in a leading* developer of CDMA technology, Qualcomm of the US, have risen by *over 50 per cent* and now stand at 163 times earnings.

Qualcomm, they note, claims that CDMA-based networks could carry up to 10 times as many phone calls as rival digital technologies. It works a little like military radio, constantly changing frequency to *make the best use of the available* bandwidth.

It will be late next year *before the technology can be* used in a working telphone network yet 11 out of 14 operators in the US have already said they will use CDMA systems. If it delivers what it promises it will go a long way to solving network capacity problems expected by the end of the century.

Mobile telephony is not simple. There are a least three *kinds of services. The first are* low cost and low level services of the cordless phone variety. In Europe, the *technologies go* by the name CT2 (cordless telephone 2) DECT (Digital European Cordless telephone) and PHS (Personal Handyphone System). This last has been adopted with enthusiasm by the Japanese.

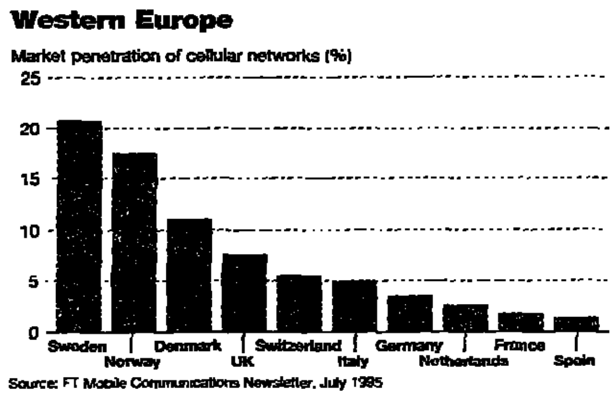
Second, there are conventional cellular services offered *by operatrors world wide.* Analogue technologies include AMPS and TACS; digital tech*nologies are GSM and* CDMA among others.

Finally, there is the mobile system of the future, the low and medium earth orbit satellite system.

A number of consortia are sinking millions of dollars into developing and launching these services which promise to make it possible for customers with hand-held telephones *to converse anywhere on earth.* The consortia include Iridium, led by Motorola of the US, Odyssey led by TRW, Inmarsat, the international satellite telephone organisation and Globalstar.

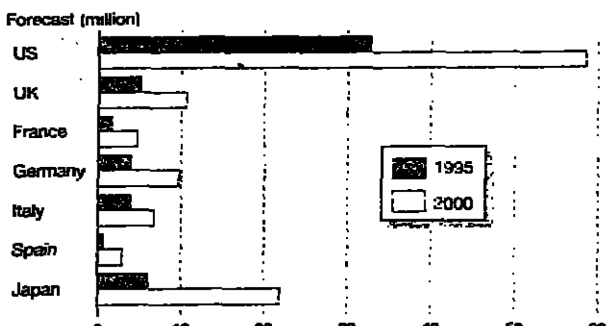
The stakes are high and so are the risks. The US Office of Technology Assessment noted this year: "Potential users do not know what the new systems will really offer and *technical details remain to be* finalised". It will be the turn of the century before the winners *and losers in this race* can be identified.

Western Europe
Market penetration of cellular networks (%)



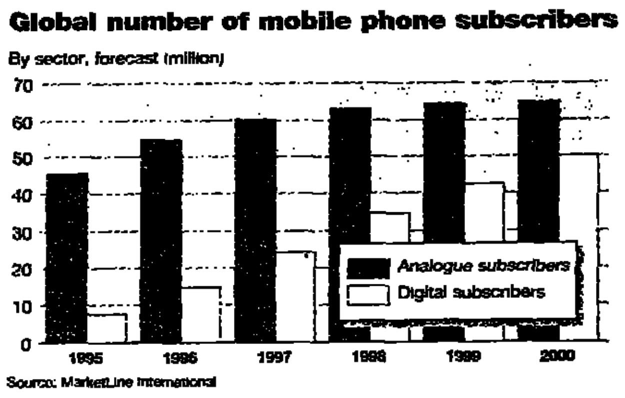
Source: FT Mobile Communications Newsletter, July 1995

Mobile phone subsribers
Forecast (million)



Source: MarketLine International

Global number of mobile phone subscribers
By sector, forecast (million)



Source: MarketLine International

People in all walks of life are now discovering the benefits of mobile telephony: this caller in Jakarta, Indonesia, is using an Alcatel system. Total telecom investment in Indonesia topped $1bn last year

هكذا من الأصل

■ **Mobile data services:** The US market is the largest in the world, reports **Eden Zoller**

A poor relation no longer

After a slow start, a new day is dawning for mobile data services

In the fast-moving world of mobile communications, mobile data has tended to take the back seat. It has been viewed as the poor relation to mobile voice services, capable of a few useful yet limited applications in the less-glamorous world of vehicle fleet companies. Or at least this was the view, until recently.

Today, however, mobile data coming into its own. It is being taken seriously, and according to the UK research company, Ovum, the number of subscribers in Europe and the US will climb from 717,000 in 1994 to 18.1m by the end of the century. One of the key factors fueling growth in this market is the trend among GSM digital cellular network operators to introduce data services over their networks *(see next page)*.

Mobile data services are possible over analogue cellular networks, but the GSM standard is far better equipped. It supports a short-messaging service along with other data applications, such as fax, on-line database access and electronic mail. GSM also has advanced security features, such as encryption on each call and authentication procedures based on subscriber identity module (SIM) card technology.

But despite these inherent advantages, it is only in the past year or so that GSM operators have turned their attention to mobile data in a meaningful way.

The market for GSM voice services is now well-established, and as the market matures, operators are looking at ways to differentiate their service offerings. Value-added services are the way to do this, and mobile data is top of the list. As one senior executive at UK GSM operator Vodafone, says: "Mobile data is one of those services that has always been looking for a home. Now it has found one."

In the UK, GSM operators Vodafone and Cellnet, and latterly DCS1800 digital cellular operator Orange, have been racing to build up portfolios of mobile data services. All three offer a range of on-line information services, access to the Internet, fax and data transmission and electronic mail. Cellnet has been given a little extra help by a couple of marketing alliances, formed by leading shareholder BT, which holds a 60 per cent stake in the operator.

BT struck a deal in June with Unisys, the computer and information management company, that allows Unisys to sell BT's mobile data services to its business customers, offering those services over the Cellnet network. This echoes a similar deal formed between BT and computer manufacturer Apple in February, whereby users of Apple's portable computers and its Newton personal digital assistant (PDA) can access on-line information ad electronic mail via Cellnet.

The proliferation of mobile data services over GSM is similar in the rest of western Europe, particularly in those countries which, along with the UK, have a competitive telecoms regime and where value added services such as mobile data are the new battlefront for two or more cellular operators.

Roaming facility

An aspect of GSM which makes mobile data so attractive over networks supporting this standard is the ability of GSM to support international roaming between networks.

Cellnet offers voice roaming between its own UK network and other GSM networks in more than 21 countries.

The US is one of the few countries where GSM has not so far been adopted – the Americans preferring their home-developed analogue and digital Amps standard.

However, US cellular operators have been more enthusiastic about mobile data than their European counterparts, and recently nine leading US operators, including Ameritech, McCaw Cellular and Bell Atlantic, joined forces to develop the Cellular Digital Packet Data (CDPD) protocol that can be overlaid on analogue networks to provide advanced packet-switched data services.

The US market for mobile data services is the largest in the world and will continue to be in the near future. Ovum reckons that of its projected 18.1m mobile data subscribers by the year 2000, 10m will be American.

In conjunction with the new-found favour for mobile data in the GSM camp is the long-established support from dedicated mobile data network operators providing services using other data communications systems. In the UK alone there are three such operators all using different technologies: Ram Mobile Data UK, which uses the Mobitex system developed by Swedish telecommunications equipment manufacturer, Ericsson; Cognito and Securicor Datatrak which have both developed their own mobile data systems.

Cognito and Securicor Datatrak are the exception to the rule, as, in general, data-only network operators have either adopted Mobitex or the rival DataTac system developed by US giant Motorola.

The latter's Ardis network in the US is one of the largest in the world and by the end of last year had more than 40,000 subscribers. DataTac has also been adopted by operators in Germany, Switzerland, Singapore and Hong Kong.

Motorola and Ericsson are both pushing hard to persuade potential operators to adopt their technologies, although in Europe Mobitex appears to have the edge.

Ram Mobile Data in the UK runs a Mobitex data-only network, along with two operators in France, one each in Germany, Belgium, Sweden, the Netherlands, Norway, Finland and Poland.

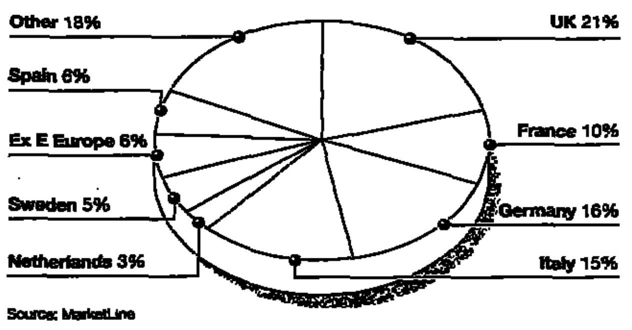
However, it is not so much the number of operators backing Mobitex, but what is being done with it that is important. France Télécom, Mobile Data, along with the Ram Mobile Data networks in the UK, Netherlands and Belgium have launched the first commercial roaming service for mobile data in Europe and have plans to provide roaming services to the other European Mobitex operators in the near future.

An engineer from British Gas Services using a mobile data system – believed to be the largest in the UK: see case study, below

The Psion Workabout: a hand-held computer that combines with National Band Three (NB3) to provide off-the-shelf communications systems for commercial vehicle fleets. NB3, a leading two-way mobile radio network operator in the UK, also has plans with Psion to develop other applications, such as invoicing, stock control and sales order entry

Distribution of cellular subscriber base

European projections to year 2000



Source: MarketLine

Digital and analogue mobile phone subscribers

Figures in millions for 1994

Country	Analogue subscribers	Digital subscribers	Total subscribers
US	24.10	0.00	24.10
UK	3.10	0.44	3.54
France	0.42	0.54	0.96
Germany	0.72	1.75	2.47
Italy	2.40	0.00	2.40
Spain	4.10	0.00	4.10
Japan	2.92	0.38	3.30

Germany has the highest percentage of digital mobile subscribers – 70.9 per cent of subscribers are connected with a digital network. Source: MarketLine International

■ **Mobile data case study:** Application by British Gas Service engineers. **By Paul Taylor**

A large-scale solution

Customers benefits include faster maintenance services and lower costs

British Gas Service is one of five new business units which have replaced 12 regionally-based British Gas operations in the aftermath of privatisation. Its primary role is to dispatch service engineers in response to maintenance calls.

In common with the other four business units, formed in March last year, it must now compete with other companies in the private sector without the benefits of internal subsidies.

Its success depends on a new set of business-critical computer systems which automate the service operation and reduce costs significantly. These new client-server based systems include one of the largest mobile data applications in the UK, designed and built by CMG Computer Management Group, the computer services group.

"The new systems are absolutely intrinsic to the future success of British Gas Service because it's the only way in which the company can provide the right levels of service and perform profitably for its shareholders," says Robin Fay, project manager for Area Operations who looks after about half of the new systems including the Field Application System.

"The enormity of the project becomes clear when you realise that the ratio between field service engineers and the administrative back up staff used to be 1:1 and we're targeting a ratio of 30:1 by the end of 1996.

"The engineers used to work out of 91 depots but will now operate from just seven service centres, and their numbers will be reduced by several thousand. The mobile data system is the key and so it was vital we chose the right IT partner to design and develop it for us."

CMG had already designed a trial system and was picked by Robin Fay and his team to design and develop the Unix-based application for nation-wide rollout.

Business targets

The variety and size of the different databases used by British Gas Service, and the number of people accessing that data, meant that client-server offered the most efficient processing model to achieve the company's new business targets.

When a customer calls one of British Gas Service's seven Area Service Centres, a computer telephony integration (CTI) system with caller line identification (CLI) brings up relevant customer details on the operator's screen, so the customer is not kept waiting and does not have to waste time re-supplying information.

These details include their service contract, the appliances covered, and the date of the last service visit. The CTI system, which uses software from Datapoint, allows calls to be transferred, along with the relevant on-screen data, to another operator if necessary.

In addition, operators can 'drill down' to gain more detail on any aspect of the customer history, stored on other servers in the organisation.

The customer contact system then makes a job request which is sent both to the contract management system and the work scheduling and allocation system which runs on Sun and IBM RS/6000 servers and automatically schedules the call against a constantly updated diary, allocating it to the most suitable engineer on the basis of location, skill pro-

Continued on next page

■ **Paging:** Fresh applications

The bleeper gets hip as new markets emerge

Today's high tech pager is a long way from the old tone-only gadget bleeping in a doctor's pocket, writes *Kris Szaniawski*

Europe's long dormant public radio paging sector is at last beginning to stir. Big initiatives in both the business and consumer sectors are cranking into gear, although Europe still has a long way to go before it catches up with applications in North America and the Asia-Pacific region.

New products and services are being launched in a bid to tap the elusive European consumer market. Ever more customer-friendly pagers with names like Swatch the Beep are appearing as paging operators team up with companies such as Swatch and Benetton in their desire to reach the youth market.

Services have been given user-friendly names such as Amigo, Buzzer and Tam Tam, as operators have sought to convince teenagers of the attractions of sending coded messages on numeric pagers. It is all a long way from the old image of a tone-only radiopager bleeping in a doctor's pocket.

The marketing revolution in Europe has been mainly stimulated by the success of the calling party pays (CPP) concept. Encouraged by the success of the first CPP service – introduced by Sweden's state-owned mobile operator Telia Mobitel two years ago – many other operators have already launched full or quasi-CPP services or are planning to.

Unlike with conventional paging services which have not proved to be popular with the consumer, the CPP subscriber does not have to pay an ongoing monthly subscription charge or sign a contract. The subscriber simply goes to a high street retailer and buys a pager which is automatically connected.

Once the consumer has purchased the pager – typically numeric pagers are now available for under £100 – he or she does not need to pay anything more. The operator makes a profit from the premium rates levied on the telephone users who send messages to the pager. The cost advantage to a subscriber of a CPP service over a cellular mobile phone is significant.

The purchase cost of numeric pagers – which use a small screen to display numbers – has dropped in recent years to almost that of tone-only pagers which simply bleep, so making them suitable for the consumer market.

Alphanumeric pagers, on the other hand, cost more to buy and are also more expensive to use because bureau staff are required by the operator to convert messages into text.

Numeric paging dominates the global market, accounting for more than 80 per cent of the worldwide paging population.

Apart from a temporary slowdown caused by the operator having run out of capacity earlier this year, Telia Mobitel's Minicall Privat CPP service has been growing at a

> **The 'calling party pays' concept proves a winner**

remarkable rate since it was launched in 1993. It saw 50 per cent growth over the last year and aims to double the number of subscribers over the next twelve months. This kind of growth in a market that has the highest mobile cellular penetration rate in the world – 20 per cent – has convinced other European operators that a new paging market niche is there for the taking.

Since autumn 1994, CPP services have been launched in France, Germany, Ireland, the Netherlands, Portugal and the UK. According to Christen Rindorf, executive director of the European Public Paging Association (EPPA), high-profile marketing is crucial to the success of CPP services in the consumer market. In the past, mobile service providers have not promoted paging with as much vigour as their mobile telephony services.

The last year has also seen the launch of digital paging services in Europe based on the European Commission-backed Ermes standard. Ermes (European Radio Messaging System) is being touted as a potential global wireless messaging standard.

Ermes offers a wide range of services not available on current paging systems. According to Peter Hurst, secretary of the Ermes Memorandum of Understanding (MoU). "Ermes has a much higher capacity than existing systems. It can transmit messages faster. It can deliver more text and it can offer value-added services. Furthermore, it offers the prospect of international roaming."

Four commercial Ermes services have already been launched since the beginning of last year – Infomobile and TDR in France, and Eurobivo and Easycall in Hungary. France Télécom is expected to launch a third French service later this month, and further launches are anticipated in Finland, Sweden, the Netherlands and Denmark over the next six months.

The implementation of services in the UK and Germany has been held up partly because of concern about interference between Ermes and other services in adjacent channels. Recent technical tri-

> **Already, more than 20m pagers are in use in Asia**

als, however, seem to indicate that fears of interference problems have been exaggerated. According to Mr Rindorf, positive results from trials such as those currently being held in the UK will encourage the early implementation of Ermes services.

The European Commission's and manufacturers' ambitions for Ermes are not restricted to Europe – a service is about to be launched in Saudi Arabia – but, most significantly, they hope to make inroads in the fast-growing Asia-Pacific region.

The Ermes MoU – which now has 37 members in 23 countries – held its first international paging forum specifically for the Asia Pacific region in Kuala Lumpur at the beginning of last month.

It is not yet clear that Ermes will be able to recreate the success of the European GSM digital cellular standard. Ermes networks are planned in Malaysia and Singapore, whereas a number of countries, including Japan, have opted for Motorola's rival Flex digital paging standard.

The Asia-Pacific paging market holds obvious attractions, as it is already the world's second largest and is growing fast. It had reached around 20m subscribers by the end of 1994, well ahead of Europe's 3.2m and an increase of 50 per cent over the previous year.

China is the largest growth market in Asia. According to estimates by the country's Ministry of Post and Telecommunications, the number of radio-paging users in China could increase by 4.5m this year. In Beijing alone, there are some 150 paging companies.

Overall, the consulting group EMCI predicts the number of subscribers in the Asia-Pacific region will more than triple to reach more than 70m by the end of the decade out of a world total of 130m In Asia, paging has proved to be a popular cheap alternative to mobile cellular services.

North America, still the largest paging market in the world but approaching maturity, is expected to double by the end of the decade from the 27m reached at the end of last year. The growth rate for 1994 was 38 per cent.

The rapid expansion of the consumer market and the implementation of narrowband PCS advanced messaging services such as two-way services will ensure continued high growth rates in the US, says EMCI.

Last year's auction of radio frequencies for narrowband Personal Communications Services (PCS) attracted considerable interest from telecommunications and IT companies not normally associated with paging such as McCaw Cellular and Microsoft but keen to explore new value-added paging opportunities.

The new two-way services will allow users to make and receive data messages and to automatically acknowledge receipt of a paging message or choose one of a number of set return messages such as "I'll call you right back."

It is also hoped to use two-way paging to boost the market for personal digital assistants (PDAs) which have so far conspicuously failed to take off.

■ **GSM - Groupe Speciale Mobile:** The European system has gained valuable support in the US, reports **George Black**

A de facto standard emerges

GSM's success as a standard for digital mobile phone technology has surprised even its most enthusiastic supporters

■ Hardly mobile: pictured above is what is claimed to be the world's first mobile telephone, a hefty creation by Oki in the US in 1976.
■ In contrast, right, at a European checkpoint, a car driver calls his hotel, using a lightweight Motorola GSM digital telephone

A couple of years ago, Groupe Speciale Mobile (GSM) looked unlikely to gain acceptance in the US market. The industry was resisting it in favour of home-grown standards which American companies could be sure of dominating.

But the spread of GSM to become not only the first pan-European standard for the business but also a standard widely adopted in Asia and the Middle East, has forced the US industry to acknowledge its importance. From an original proposal by France Télécom and the German Bundespost in the early 1980s, GSM was developed with the encouragement of the European Commission as a collaborative venture between European telephone service operators and equipment manufacturers.

It has achieved what its backers hoped. First, they have largely avoided the problems which had occurred in setting standards for the analog mobile phone market.

Secondly, there is now a continent-wide standard which creates economies of scale for network operators and manufacturers. This has produced a much bigger market than would otherwise have been possible, increasing competition and pushing prices down.

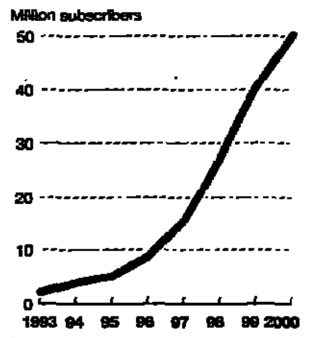
Digital technology will overtake analog in Europe around 1997 to 1998, according to market research by Dataquest. The UK, Europe's largest cellular market, is however, going over more slowly to digital than some other European countries.

Many business users are switching to digital, but most domestic users are not. At present, digital is still regarded as a special service for travelling business people, rather than for the mass market.

The two main UK network operators, Vodafone and Cellnet, are now focusing more on their digital than on their analog networks. The network operators are adjusting their tariffs to try to attract more domestic users. Mike Short, director of international affairs for Cellnet, forecasts that GSM-based systems will make up 20 to 25 per cent of the total this year – "GSM growth has exceeded our expectations in the last year," he says.

He claims the shortage of GSM handsets, due to a shortage of chips and other electronic components, is the main factor holding back the UK market at present. This situation is likely to last until at least the middle of next year. Ivan Donn, a senior business

GSM: experiencing an exponential growth rate



Source: Northern Telecom

manager at Vodafone, says improvements in the infrastructure of digital base stations over the next two years will raise the level of coverage. This will do more than anything else to promote the digital service, in his view.

Experts' views differ on whether the highly subsidised price of GSM handsets to customers can fall much further.

Some think it could drop from an average of £300 to around £200, with the cheapest being sold at less than £20, but this could attract more of the wrong sort of customer and worsen the already serious "churn" rate – customers who default. Competition from Mercury's One-2-One and Hutchison's Orange networks will help to push tariff prices down and increase UK demand for digital services GSM.

GSM has become the first-generation standard for digital cellular telephony right across Europe. Virtually every European country now has a GSM service available, or will have soon; many countries have more than one.

European companies are now better positioned to export their products and services on the back of the new standard. GSM is the dominant standard in the huge and fast-growing market of much of Asia Pacific. (though not in Japan, South Korea or Hong Kong); as well as in India and the countries of eastern Europe.

In North America, it has gained access to the market in competition with the alternative technologies of TDMA (Time Division Multiple Access) and CDMA (Code Division Multiple Access).

Which is the best technology is an issue which has divided experts, and remains to be thoroughly tested, with new applications running under live usage conditions. None of the contenders has established clear superiority.

Both of the main alternatives have powerful allies in the US telecommunications industry – TDMA is espoused by AT&T, CDMA by Sprint.

However, because of the lack of a clear US standard and the predominance of GSM outside the US, a number of smaller US telecommunications companies have thrown their weight behind GSM. Thus, market research figures which might seem to indicate that GSM was losing momentum as it ceded market share to other emerging standards, can be misleading.

Dean Eyers, a senior analyst at Dataquest, points out that although GSM may have passed its peak in market share, it will still be by far the most followed standard in 1999, when the worldwide digital cellular market will have multiplied ten times to around 177m subscribers.

That could be only a small proportion of those who will

> **GSM is now the dominant standard in the Asia Pacific market**

eventually have mobile phones, according to the vendors' marketing campaigns.

"In the long term, other technologies will supersede all of the current standards," says Mr Eyers, "but GSM has a good future for five to ten years, and the next generation of standards will incorporate many GSM concepts."

GSM has introduced a built-in level of intelligence into networks which enables user options to be more easily configured, and is a much better data communications platform than older systems, he says.

One possible application is in the road-tolling systems which the UK government has recently announced it will be testing – "GSM is the first choice for digital cellular around the world and will continue to have success, though there will be pockets of other technologies such as CDMA," predicts Mr Eyers.

The next generation of standards could combine GSM with the standard called DECT (Digital European Cordless Telephony). DECT has the advantage of being able to support very high subscriber densities in areas such as railway stations and airports, which have been a problem for GSM.

The next generation of mobile phones may therefore have both GSM and DECT capability built into them. Such systems are already being tested.

Further ahead, both GSM and DECT features could be re-used in the European project called Universal Mobile Telephone Systems (UMTS), which is still only at the discussion stage.

■ **GSM applications:** A vehicle for moving data **By Julia King**

Services become more innovative

There are already 100 GSM networks with a total of 10m customers – and the number is rising fast

Industry sources predict that by the year 2003, wireless communications will account for some 40 per cent of all calls (wireless and wireline) made worldwide.

While in 1993, the wireless market was worth \$56bn, by 2003 it is expected to be worth \$4 trillion.

Mobility has emerged as one of the key issues of the decade for business users and developments in communications have been instrumental in furthering their ability to link back into their base office wherever they are in the world.

Cellular systems have proved unexpectedly popular, leading to the appearance of the digital GSM system originally developed for use in Europe and now also found much further afield.

According to Mike Short, director of international affairs for Cellnet and chairman of the GSM MOU (Memorandum of Understanding) group, there are now 100 GSM networks.

Between them, these networks are expected to have 10m customers by the end of this month and 12m by the end of 1995 – "15 per cent of the cellular world total will be GSM-based this year, and 40 per cent of the European cellular market," he predicts.

The MOU group is made up of 150 operators in 80 countries. The majority of these operators are outside Europe. While the growth in the marketplace is mainly accounted for by voice traffic, most European operators also offer Short Message Service (SMS) capability.

SMS, which Vodafone claims to have been first to demonstrate at the end of 1992, allows short text messages of up to 160 characters to be displayed on mobile handsets.

The capability is available even when the mobile's user is already using the handset; in other words, text and speech can be transmitted simultaneously. SMS is additional to the GSM system's fax and data capabilities.

Today, says Mr Short, most of the instances of use are mobile terminated – that is, sent to the mobile. He expects to see increasing use of the service "when features are more stable". This will come with phase two handsets, due to be launched in 1996, he says – "they will offer a broader range of features and applications".

Functionality akin to that found with most office exchanges will be incorporated in handsets – "there will be more creative use of the service next year."

Next year will be one year of applications and customer service. To make effective use of

Mike Short of Cellnet, the chairman of the GSM MoU association which represents global GSM network members in 80 countries

Howard Ford, managing director of Cellnet, which – along with rival operator Vodafone in the UK – is now focusing more on digital than on analogue networks

SMS, users need intelligent terminals more like a computer keyboard and with larger displays and a broader range of information providers, says Mr Short.

Regions such as South Africa, Australia and Hong Kong already have SMS in place. The Asia Pacific region is likely to take up the service in greater depth next year. Mr Short says there has been "a very significant increase in SMS where it is in place as a message alert".

While this indicates that the primary use of SMS is as a paging type of service, there is no reason why SMS should not be used for sending longer messages. For example, subscribers to Reuters Dispatch service could have a number of messages sent sequentially.

Users would simply scroll through 160 character message after message.

The main deterrent to increasing the number of users of a mobile data service has always lain with applications development: such large resources are needed to understand how a business works in order to be able to develop a useful mobile messaging system, that it tends to put itself out of court before the service has even got off the ground.

It is apparently difficult to develop a generic messaging system that is truly useful to a sufficiently large number of different subscribers to make it worthwhile.

Small wonder, then, that most of the GSM operators have been devoting their resources to getting their digital systems up and running and not in developing the additional features such as SMS, says Mr Short.

There have been some moves on the data front – for example, Vodafone's agreement with Unipalm Pipex. This enables GSM subscribers to dial into the Internet using their cellular phone. Pipex offers 34 virtual points of presence, some of them European.

Access to the Internet is possible wherever a live Roaming Agreement exists with Vodafone (there are now 45 worldwide) and a data service for visitors is supported.

Vodafone has in place applications development initiatives with companies including Lotus, Microsoft, Novell and a number of smaller developers.

The latest agreement enables GSM subscribers to send and receive text messages on suitably-equipped handsets via Hewlett-Packard's OpenMail client-server based system. OpenMail users can now access their messaging services using their GSM handset.

Vodafone is also working in conjunction with Psion on a system that will use the Psion 3A robust palmtop computer.

Believing that some companies do not require their GSM system for voice, Vodafone has implemented a data-only tariff. DataWorld is a tariff that allows users to send data, fax and Telenote (SMS) messages; MessageWorld is designed for those who only want to send Telenotes whether from fixed to mobile, mobile to fixed or mobile to mobile locations.

The latest GSM handset to be launched by Orbitel features a four-line, 48-character illuminated display.

The addition of optional MessageLink software and cable enables a personal computer to be attached and used as an SMS control centre. This facility overcomes the problems experienced by users of GSM handsets who might want to key in a message but who would find it next to impossible because of the size of keys on the keypad.

There is little doubt that mobile data represents a market that is, as yet, predominantly untapped.

Finding the key to unlock the potential of the marketplace could earn some systems integrator a great deal of money. The popularity of GSM as a vehicle for communications – and the predictions for its future – make it an ideal candidate on which to focus.

One of the UK's largest applications

How mobile data speeds up the job for gas engineers

Continued from previous page:

file, availability, stock on the van and journey time.

The job is then transferred to the relevant engineer's notebook PC, using the British Gas public mobile radio network, or the Ram mobile data network in the 10 per cent of the UK where PMR coverage is not good enough.

The field service engineers transmit and receive data by plugging their Panasonic portable PCs into mobile gateways in their vans using radio modems, although it is planned that credit-card sized PCMCIA cards and cellular telephones will be used as the interface in the future.

The engineer travels to the next designated job and uses the portable PC to update customer and appliance information. The PCs include CD-Roms running a database storing a complete stock inventory and price list on 4,000 appliances, as well as a boiler diagnostics package.

Using the database, engineers can highlight the parts needed to complete a job. The data is automatically posted into the Field Service Application ready to transfer, with the other job details, back to the scheduling and application systems and the National Parts Centre, once the engineer returns to the van.

Customer and appliance details are also updated at the time of the call and then transferred to the Works Management System.

The Field Application System and Work Management Systems also ensure that all relevant data including financial information, is automatically posted to the general ledger, HR and MIS systems, logistics and warehousing.

The Field Application System includes all the instructions needed for the complex communications process including handling two important functions.

Confidentiality

Data compression is carried out because the transmissions conducted via modem are relatively slow, and would tie up the PMR lines for lengthy periods. It also encrypts the data, to protect customer confidentiality.

The software was written in Dos running under Windows so that engineers work with a familiar interface. A great deal of validation is built into the system so that figures outside usual parameters are questioned and engineers are sometimes prompted from a 'pick list' of statements to reduce the problem of individual emphases being misinterpreted.

Robin Fay says: "The system provides much more management visibility of the engineers as well as providing a much better service to our customers. For instance, the works allocation system is updated by engineers using hot keys to enter status reports at key intervals – for example, when they arrive at a customer and when they've finished the job.

"The allocation system has a built-in alert, which flags up jobs if it appears that an engineer will not be reaching them within the agreed time scale, so a replacement engineer can be sent.

"It also sends an alert if an engineer is later checking in than he should be in relation to his work in progress."

He adds: "Ultimately, it is our customers who will benefit most with a faster and more efficient service, using less paperwork and far more focused on the task in hand."

■ **Siemens:** Manuafacturer profile. By **Wolfgang Münchau** in Frankfurt

High value-added bias

The company's drive to expand ISDN has been a big bonus

As competition in the telecommunications equipment market has intensified in recent years, equipment prices have fallen. But despite the proliferation of relatively cheaper products, Siemens, the German electrical and electronics group, has managed to retain a leading position as a supplier of telecommunications systems, and as one of the largest producers of end-user equipment.

Along with many other German companies, Siemens gears its production and marketing towards the high value-added end of the market, concentrating on telecommunications systems for both small and large companies, and upon networks capable of interconnecting its systems.

Siemens also produces telephones, mobile phones, fax machines, a range of high-tech end-user equipment that remains highly popular in Germany. Internationally, Siemens is among the three largest manufacturers of telephones with sales of 8m units in the last year.

In Germany, Siemens does not sell its end-user equipment directly, only via wholesalers and retailers – and, of course, via Deutsche Telekom, the telecommunications operator. One little-known fact is that Siemens pioneered the earliest fax machines, only to fail to exploit the technology commercially – an opportunity seized by Japanese competitors.

Benefits

Siemens benefits greatly from its traditional strengths and its commercial networks in Germany, its homebase. This has been enhanced by the acquisition of Nixdorf, the computer company, which also included a telecommunications equipment division. Internationally, Siemens gained the necessary critical mass, when it bought Rolm from IBM in 1988.

In the US, Rolm is claimed to be the third largest manufacturer of telecommunications systems, after AT&T and Northern Telecom.

Contrary to many predictions, Siemens has emerged from the deregulation process in the German telecoms market stronger than before, holding on to a stable market share of 39 per cent of systems, in a competitive end-user market.

Within Siemens, telecoms operations are divided into two divisions. The public telecoms division, which supplies telecommunication operators with industrial equipment, such as digital exchanges, remains the larger of the two, with sales last year of DM14.1bn ($10bn).

The private telecoms division last year achieved a total turnover of DM6.5bn, of which telecommunications systems account for about DM5bn, or about 75 per cent, with end-user equipment making up the remainder. In comparison, the total Siemens group, last year had a turnover of DM84.6bn.

Despite its relatively modest size – in Siemens' terms – the private systems business is the market leader in Germany, number two in Europe after Alcatel of France, but number one world-wide.

As a manufacturer, Siemens benefits greatly, though indirectly, from the drive by Deutsche Telekom, the German telecom operator, to expand Integrated Services Digital Networks (ISDN), which offers digital telecommunications right up to the level of the end user, throughout Germany.

There are expectations within the industry that ISDN may emerge as the standard of German telephony within the next few years. These efforts are greatly helped by a wide-ranging subsidy scheme from the German government with the aim to minimise the cost of transition for the end-user. ISDN's attractiveness will increase further after next year's proposed change in telecom tariffs, which will eradicate the remaining price disadvantages against digital telephony.

The impact of the switch towards ISDN, one of the few areas in telecommunications where Germany is playing a leading international role, is significant, especially since Germany is abandoning a relatively low tech telecommunications system – low-tech in comparison with the US – in favour of a totally digital system all the way through to the level of the end user.


Satellite-based multimedia sales information network: this Viewpoint system has been developed by Siemens Nixdorf with AlphaServ to allow retailers to broadcast sound and video images to standard TV sets in branch stores simultaneously, for the cost of a single transmission

The quasi-forced introduction of ISDN is a manufacturers' dream, because it shortens the replacement cycle of older systems, which may otherwise have lasted a few more years in an analogue environment.

ISDN, unlike traditional telephony, requires either digital telephones, of which there are only few more than a handful of models on the market, or an ISDN-capable telephone system, to which analogue phones can be connected.

The switch towards digital systems – which, depending on the choice of equipment, can be achieved at minimal cost after the generous federal subsidies – has already led to a telecom advertising frenzy in German newspapers. The downside, though not for Siemens, is that the fixed-rate nature of the subsidies discriminates against cheaper products.

One of the important developments in the market for telecom systems is the increasing proportion of services as part of the business. Dietrich Botsch, president of Siemens' private communications systems division, says that "the new service offerings extend far beyond the old typical services in this business. It means more than merely initial consulting, systems setup and configuration, and servicing."

This new range of services includes the setting-up of corporate networks, system management, video conferencing, and a host of other services in the fields of voice, data and video communication.

Product group

On the product side, the mainstay of Siemens' offering is the Hicom family of telephone systems, which range from small systems for small businesses, to large-scale offerings for multinationals. The second product group are the Rolm systems 9750, which are geared specifically for the North American and Asian markets. The technology of the two systems is becoming increasing similar. They are rendered compatible through a network protocol that allows multinationals in Europe and the US to access the services offered by the opposite system.

■ ***Phone fraud:*** *A fast-growing 'industry' is examined by* **Peter Marsh**

Mobile companies fight back

Investigative teams will try to trap the cloners

Teams of investigators employed by big companies in the UK's mobile telecommunications industry are due to start work later this year in a desparate effort to cut down on one of Britain's fastest-growing frauds involving illicit use of cellular phones.

The investigators are being recruited by the Federation of Communications Services, which represents many of the big names in the industry, including all four network operators – Vodafone, Cellnet, One-2-One and Orange – and most of the UK's 40 providers of mobile phones services.

Assuming the proposed changes clear legal hurdles, commercial contracts between the networks and service providers and Britain's 20,000 mobile phones dealers will be altered in the next few months. This will give the investigators the right to inspect dealers' premises to check whether they have been involved, even indirectly, in criminal actions.

The networks and service providers are worried that many of the 15,000-odd phones stolen every month in the UK – often from the back seats of parked cars or from the pockets of victims of mugging – end up with dealers after a relatively simple procedure of "cloning" to make them capable of illicit use.

Many of the stolen phones are believed to be taken to "cloning laboratories" run by highly organised groups. There the phones are programmed with electronic codes – obtained through eavesdropping on ordinary phone calls using electronic scanners – relating to existing handsets.

After the stolen phone has been "cloned" with the code of a handset that is already in use, the phone is often reconnected to one of the four networks through a dealer who is not too worried about the phone's history. The dealer picks up a commission fee of perhaps £300 for making the reconnection, the thief pockets possibly £20 from the dealer – and depending on how the cloning has been carried out, the new user of the phone can make his calls free, with the bills going to the owner of the phone with the original code.

"Stealing mobile phones and making the necessary changes to re-fit them to the networks is almost ridiculously easy," complains Mr David Savage, chairman of the service providers arm of the FCS, who is also chairman of Astec, one of the UK's largest service providers. "It is easy money for thieves."

The costs of "stolen" airtime plus re-equipping people whose phones have been cloned, and associated security measures, is thought to come to about £100m a year. The federation reckons there is a hard core of possibly several hundred dealers who are fed many of the stolen phones. If their activities can be monitored using the new teams of investigators – two, so far, and due to climb to perhaps 10 over the next year – then the big companies in the industry may be on their way to winning the battle against the fraudsters.

At present, however, the war is a long way from being won. One aspect making life relatively easy for fraudsters is the UK's relatively unregulated mobile telecoms industry, with a large number of dealers and service providers and a highly active "second hand" phone market. A second problem in the fight against illicit use of phones is that the UK was a leader compared with many other European countries in starting up its mobiles phones industry. As a result, about 80 per cent of the UK's 4.5m mobile phone subscribers are connected by older analogue networks – where the handsets

> The war against phone fraud is still far from being won

are relatively easy to clone – as opposed to newer digital networks which are predominant in much of the rest of Europe, where cloning is virtually impossible. A third difficulty for the respectable part of the mobile phones industry is the high level of car break-ins – and phone thefts – in the UK.

However as well as action to check on dealers prepared to connect up stolen phones and, if possible, freeze them out of the industry, the main mobile telecoms companies have other ideas in the battle to cut down on fraud. The most promising is the method of inserting extra electronic codes into the radio messages that mobile phones transmit to make cloning more difficult.

Vodafone is introducing to new subscribers a system which adds an extra code – the character of which is changed every time a call is made – to the message, thus making it impossible for a fraudster to be able to insert a new set of electronic messages to enable reconnection to take place. Also, both Cellnet and Vodafone have software to detect when two apparently identical phones are in action so that one or the other can be cut off.

A big worry in the future is that thieves are working out how to perpetrate fraud involving the newer digital networks. This is a particular problem for the UK's two smaller network providers – One-2-One and Orange – which solely use digital as opposed to analogue techniques.

Fraud using digital networks does not involve cloning, but rather is based on ways of disguising the fact that calls are being made using a variety of computer software techniques borrowed from the computer hacking industry. By this process it is possible for customers to run up a big bill for international calls – most of the digital networks conform to international standards and are easy to link up with ones overseas – and attempt to evade payment.

As a result of such problems, the telecoms industry is looking for better ways to screen potential users of the new digital networks to check on whether they may be prepared to use their phones illicitly. But there is nervousness in the industry about this approach, both because it is coming close to challenging the honesty of customers and because too much bureaucracy involving checking procedures runs totally against the mobile phones sales philosophy of keeping to a minimum any restrictions hampering the use of the equipment.

■ **Alcatel:** Manufacturer profile. By **John Ridding** in Paris

Bruised champion

Under new chairmanship, the company is well positioned to capitalise on market trends

In spite of setbacks, the company has a strong presence in international markets. Pictured here is an Alcatel phone user in Hanoi, Vietnam

Mr Serge Tchuruk, the new chairman of Alcatel Alsthom, is moving fast and hard to tackle the problems of the ailing French giant of the telecoms equipment sector.

Last week, three months after taking the helm of the French group, he announced a radical restructuring programme aimed at reversing a decline which pushed the group into its first ever loss in the first half of this year. The plan includes a write-down in assets of between Ffr10bn and Ffr12bn and restructuring provisions of about the same amount. Significant job cuts are expected from the company's 230,000 stafff, while management is being reorganised to improve efficiency and responsiveness to the fiercely competitive market.

Such steps are necessary to steer the group back on course after a series of extraordinary setbacks which have battered and bruised the French industrial champion.

A corruption scandal forced the departure of its former chairman earlier this year, while a separate legal wrangle concerning allegations of over-billing ensnared one of the group's main subsidiaries and damaged relations with France Télécom, its principal client.

Contraction in some of the company's biggest markets, and specific setbacks in Germany, caused operating profits from telecoms activities to plunge from FFr8.3bn (£1.06bn) in 1993 to FFr3.1bn last year, prompting a fall of almost 50 per cent in net results at Alcatel Alsthom, the parent company. Shares in the group fell by about 50 per cent last year, but have since regained ground in the expectation of recovery.

In satisfying such expectations, Mr Tchuruk has several strong cards to play. The company retains a strong and diversified geographical presence, dominating many markets from France to China. In response to Beijing's policy of increasing local manufacturing, Alcatel is establishing several new joint ventures, inline transmission, microwaves and mobile telecoms, to add to its existing switching plant in Shanghai.

The French group is expanding rapidly in other areas. In the US, for example, Mr Jozef Cornu, Alcatel's chief operating officer, estimates that sales of transmission equipment will rise to about US$800m (£500m) this year, compared with $560m in 1994. In Latin America, Alcatel is taking advantage of its close ties with Telefonica of Spain to penetrate the local markets.

The group has also built a strong presence in many leading products and technology areas. Its broadband technologies, ranging from ATM switching systems to SDH transmission devices, provide Alcatel with a strong position in growth sectors and in the nascent multimedia communications industry. Its data networks division is already experiencing rapid growth, accumulating annual turnover of about Ecu350m (£291.5m) – "we expect this business to continue to grow at a hefty rate," says Mr Cornu.

Concerning the scandals and investigations which have plagued the group over the past two years, the company is relatively sanguine. The departure of Mr Pierre Suard, the former chairman, has eased the adverse publicity concerning allegations of the 'abuse' of corporate funds and has helped calm client and investor fears. Although legal investigations are continuing, tensions with France Télécom concerning the allegations of overbilling for equipment have also been reduced. "There is no doubt that we have suffered from these affairs in business terms," says Mr Cornu. "But my feeling is that as far as relations with France Télécom are concerned, we have the low point behind us."

Unfortunately, the same cannot yet be said for many of the company's principal markets – "if you look at the business environment, 1995, in terms of investment is still a pretty poor year," says Mr Cornu. In Germany, in particular, prices and demand remain weak, increasing the urgency of restructuring at the company's loss-making local subsidiary. "We are on course with our recovery plans, but the full effects will not be seen until 1996," says the Alcatel executive.

The French group also faces a challenge to catch up with the industry leaders in mobile telecommunications, one of the fastest growing market sectors. The failure of a planned alliance with AEG and Nokia at the end of the 1980s, undermined Alcatel's strategy for entering the sector and has left struggling to keep pace. "It has been much harder for us to take advantage of the mobile boom than for some of our competitors," admits Mr Cornu. "We really came from zero."

But Alcatel is responding. In May, for example, the mobile telecoms business received a FFr1.15bn capital injection from Alcatel NV, its holding company, to cover accumulated losses and planned investments. Mr Tchuruk has said that mobiles will be a strategic area of development for the group, promising management and financial resources to ensure its development.

"They have a lot of ground to cover to make up the gap with companies like Ericsson and Motorola," says one telecoms industry analyst. "But the pace of the expansion of the market, in terms of new types of customers and new geographical areas means there is room for all of the big players."

In other promising sectors, patience is the order of the day. The much-trumpeted multimedia age has yet to see ambitious proposals turned into orders for suppliers like Alcatel. The entry of new players into the market as a result of liberalisation and deregulation is also at an early stage.

Mr Cornu is confident that the wait will be rewarded – "in multimedia, we are not yet seeing enormous investments, but I am sure it will come," he says. It is a similar story concerning new entrants into the telecoms market, from utilities companies, to railway operators and cable TV companies.

"There is a lot of talk, but not much spending at the moment. But we will see a lot of things happening before 1998."

■ **Nokia and Ericsson:** Profile of two Nordic equipment manufacturers. By **Hugh Carnegy**

Two remarkable successes

The two Nordic companies have taken a leading position in the fast-growing mobile sector

It is no exaggeration to say that Ericsson of Sweden and Finland's Nokia, two Nordic neighbours based far from the world's big markets, have taken the booming mobile telephony industry by storm in the past five years.

Moving with a speed that has left many of their larger rivals in traditional fixed telephony trailing in their wake, the two companies have taken leading positions in a still fast growing sector – and have reaped the rewards in the shape of big profits growth and spiralling share ratings.

Ericsson, controlled principally by the Wallenberg family industrial dynasty, is the world's biggest supplier of mobile telephone infrastructure, holding some 40 per cent of the market measured by the proportion of the world's 60m mobile telephone subscribers connected to its systems. It stands well ahead of second placed AT&T of the US, which has some 10 per cent.

Furthermore, Ericsson is the world's third largest supplier of mobile handsets, with a 10 per cent market share.

Rising sales

That market is led by the US group Motorola. But in second place is Nokia. The Finnish company, once better known for its production of lavatory paper and rubber goods, has only a small proportion of the mobile infrastructure market. But it accounts for an impressive 20 per cent of all mobile handsets sold worldwide.

The success of the two Nordic rivals has been amply reflected in their results. In the first half of this year, Ericsson posted a 40 per cent rise in pre-tax profits to SKr3.22bn while sales rose 18 per cent to SKr43.23bn. The engine of this growth was the Radio Communications division, where sales shot up 54 per cent to SKr23.45bn, accounting for comfortably more than half group sales, compared with 25 per cent five years ago.

Profits growth at Nokia, which is more highly geared to mobile telephony, has been even more spectacular. In the first four months of the year, Nokia pre-tax profits were ahead by 85 per cent over the same period last year, reaching FM1.8bn. Group sales were up by almost 50 per cent to FM11.4bn. The result followed full year profits in 1994 of FM4bn, a 250 per cent leap over 1993 and a record for a Finnish company.

Not surprisingly, investors have queued to gain a share of the success of the two companies. Nokia's share price has risen more than 20 times since 1992, when Jorma Ollila, the chief executive, took over what was still a stumbling conglomerate and focused the group on its telecoms operations. The company now accounts for nearly 40 per cent of the total market capitalisation of the Helsinki stock exchange.

In Sweden, Ericsson has also been a top performer, its share price more than tripling since 1990 (taking account of share splits) and regularly recording record levels this year.

How have Ericsson and Nokia achieved such success? And, crucially, what are their prospects of sustaining it as competition in the mobile sector grows more acute?

A key factor Ericsson and Nokia shared in building up their expertise in mobile telephony was the adoption in the early 1980s – much earlier than in most parts of the world – of a common operating standard by the Nordic countries. This common standard using analogue technology – called NMT – provided the basis for the speedy spread of mobile systems in Ericsson's and Nokia's home markets. Sweden, Norway, Denmark and Finland remain top of the world league of penetration of mobile telephones per head of population.

As other countries elsewhere established mobile systems, many opted for the NMT system, giving Ericsson and Nokia an in-built advantage. In Ericsson's case, its long history in telecoms markets around the world (it was in China in the last century) meant it had vital experience and recognition in diverse markets to help it along.

The two companies gained further ground by quickly developing the digital operating systems which are now rapidly overtaking analogue as the preferred technology. Both Ericsson and Nokia had equipment ready to supply the GSM digital standard adopted in Europe and have subsequently scooped most of the contracts for GSM systems worldwide.

The startling rate of growth for mobile telephones worldwide offers Ericsson and Nokia ample opportunity to continue to grow. Since 1990, the number of worldwide subscribers has jumped from 6.5m to more than 60m today. Industry projections foresee the number escalating to 350m by the end of the year 2000.

In use here: the Nokia Orange mobile phone – a fruitful outcome of extended research

But the next few years may not necessarily be plain sailing for the Nordic rivals. For a start, much bigger competitors such as AT&T, Motorola, Siemens of Germany and France's Alcatel will be pushing to catch up. Profit margins, to date attractively large because of the strength of demand, may well fall as competition rises.

The big players have more financial clout than Ericsson and Nokia, which can be important in growing markets like China where customers often seek help from suppliers in financing contracts. To counter this threat, Ericsson in August announced a SKr7.5bn share issue – the biggest of its kind ever in Sweden – to improve its ability to offer contract financing to clients.

All players will also continue to face a fierce battle over technologies in which making the right choice can be crucial to a company's success. To illustrate the point, some 60 per cent of both Ericsson's and Nokia's sales last year were from products which did not exist three years previously.

Research and development is the key. Ericsson in recent years has spent proportionately far more – up to 23 per cent of sales – on R&D than its rivals. Recently it acknowledged that one area of heavy spending, on broadband "multimedia" products, had held back profitability without, to date, seeing a breakthrough in mass-market products. Nokia has a more tightly focused R&D strategy, concentrating hard, for example, on combining mobile voice and data transmission. But that is also a risky strategy, as picking the wrong technologies could leave the company exposed later on.

A recent example of the kind of setback the two companies could suffer came in the US, the world's largest mobile telephone market with 25m subscribers at present. There, two of the biggest operators of Personal Communications Services, a new generation of mobile phone and other communications networks, opted to use a digital operating system called CDMA which neither Ericsson nor Nokia can supply.

The Nordic companies were undeterred by the decision. Ericsson, which is shifting up to 8,000 of its workers from its public communications division into mobile telephony in an effort to sustain its leading position, says it still intends to capture a one third share of the US; Nokia, likewise, is forging ahead with plans to increase manufacturing in the US and to produce handsets for every system. The US development underlined, however, that there will be no free rides for Ericsson and Nokia as they seek to entrench their remarkable success in mobile telephony to date.

■ 'The last mile': Ownership of a few kilometres of copper wire can provide a formidable competitive advantage, reports **Alan Cane**

How the local loop becomes a devastating weapon

Competition is far from easy when an incumbent operator has a stranglehold on the local network

The "local loop", the few kilometres of copper wire which traditionally make the final connection between a local exchange and the home or office, can be a devastating weapon for a dominant telecoms operator in a newly liberalised environment.

Mercury Communications, chief competitor to the UK's dominant operator British Telecommunications (BT) put the case clearly in a submission to the UK telecoms regulator: "BT's ubiquity through its control of the local loop is the most important barrier to the development of sustainable competition."

Peter Howell-Davies, the new chief executive of Mercury Communications, chief competitor to the UK's dominant operator British Telecoms. BT's 'ubiquity through its control of the local loop is the most important barrier to the development of sustainable competition,' says Mercury

Ownership of the local loop provides competitive advantages which newer entrants find hard to overcome. In particular, an operator which already provides a customer's plain old telephone services is in a strong position to supply new services such as information and entertainment when they can be transmitted over the same network. Customers faced with innovative services feel more comfortable if they are supplied by a familiar organisation.

Incumbent operators can raise a variety of technical barriers against newcomers. There is, for example, the question of "number portability." Nobody is anxious to change to another operator if it means changing a familiar number: allowing a customer to retain a number is not difficult but there are costs incurred in reprogramming switches and arguments raised over who pays.

Then the former monopolists must be prepared to allow their new competitors to site transmission on their premises to allow fair access to both network and customers. A broad catalogue of objections and obstacles can be created to slow this process.

And there is the question of calculating fair prices for access to customers where it is uneconomic or impracticable for new entrants to build their own local loops. Many of the longer-established operators have accounting and billing systems which cannot easily disgorge this level of detailed information.

AT&T, the US long-distance operator with far-reaching international ambitions, and others were reported earlier this year as complaining that the German local loop would remain in the hands of Deutsche Telekom after liberalisation. They wanted assurances that the German operator would not be allowed to charge unfair prices for access to customers.

Countering the incumbent operator's stranglehold on the local loop is therefore seen as essential to the development of efficient competition in markets which were formerly the fiefdom of a single monopoly operator. But it is not easy.

Two large markets already liberalised, the US and the UK, illustrate the breadth of problem. The two countries took quite separate approaches to opening competition in their home markets.

In the US, the 1982 AT&T divestiture decree and the 1984 modified final judgment, the two pieces of legislation responsible for the break up of the Bell Telephone System, were underpinned by an assumption that local telephony was a natural monopoly while long-distance transmission was ripe for competition.

It resulted in a strict separation of the local and long-distance markets. The regional Bell operating companies (Rbocs) were forbidden to enter the long-distance business, while AT&T was not allowed to offer local access. These restrictions do not apply to non-Bell companies much as MCI, the second largest long distance operator, or to Sprint. The Rbocs, however, now derive more than 50 per cent of their revenues from leasing access to the long distance carriers.

The manner of the break-up, however, failed to anticipate developments in wireless and other technologies. In June this year, the US Senate overwhelmingly agreed a sweeping telecommunications bill which will allow the Rbocs, the long-distance carriers and the cable television companies and electrical utilities to move into each other's businesses.

> Entrenched operators can raise a variety of technical barriers against newcomers

The Senate decision, however, reflected changes in state legislature which were already transforming the local telephone market. By the end of last year, for example, 13 states were already allowing some form of competition between the Rbocs and other telecom companies.

In New York, customers can already choose between their traditional operator, the Rboc Nynex, and new entrants MFS and Teleport.

In the UK, the market has been open since a government review in 1991 and there are currently more than 150 operators licensed to compete with British Telecommunications, the largest UK operator.

Cabling work in the UK: engineers from Mercury Communications lay a new network in Newcastle

Since 1992, in a development virtually unique to the UK, cable television operators have been allowed to offer voice telephony in addition to entertainment. BT, however, cannot broadcast over its main network. This "unfair" playing field was created to allow the cable companies to establish themselves and to encourage them to invest the considerable sums necessary to wire the UK with high capacity fibre optic cable.

Despite these challenges to its dominance, BT still has about 90 per cent of the UK telecoms market. Although the cable companies are beginning to make inroads, progress is slow. BT has only just agreed to accounting separation so that costs and prices in its separate businesses can be monitored.

Alternatives

Although it has agreed in principle to number portability, it has disagreed with the regulator over who should pay for it, forcing – under UK rules – a reference to the UK's Monopolies and Mergers Commission. It could be a further six months before portability is achieved in practice.

What alternatives are there? One possibility is fixed radio access although as Analysys, the UK-based telecoms consultancy points out, radio-based networks have yet to prove they can offer either quality or the availability of the fixed network.

Another, more radical approach, is to split a former monopoly operator into two parts. The first, a network operation, would have the responsibility of providing access lines to other operators on a fair and non-discriminatory basis. The second part, a services company, would be able to compete with other players on the basis of the quality and innovative nature of its products.

It is an attractive notion but the rapid development of "intelligent" networks, where computer systems are integrated deeply into the structure of the network, may rule it out of court. It may simply be too difficult to separate access lines from services in these modern networks.

Research intensifies to find alternative local connections: see next page.

■ Electronic data interchange: Report by **John Kavanagh**

Debate over benefits of EDI in finance

The tiny number of users of financial EDI suggests that companies still have to be convinced about its advantages

IBM Europe trades electronically with over 90 per cent of its main suppliers and is saving millions of dollars a year – but it stops short of using electronic data interchange (EDI) for payments.

The computing giant is not a luddite but part of a huge majority which is so far rejecting financial EDI. The UK, Europe's biggest EDI community, has just 40-50 organisations doing financial EDI – out of a total of 12,000 trading partners using EDI to send orders, invoices and other documents between their computer systems over telecom links.

Yet financial EDI is not particularly new. Banks have offered services since 1990, receiving payment instructions in the Edifact international standard format and sending payment to the recipient's bank. Detailed remittance advice is sent at the same time via EDI by the payer or by the bank. If a recipient does not use EDI, the remittance advice can be printed and posted: indeed, UK banks believe only 10 per cent of payments involve EDI from end to end.

Benefits depend on the previous payment method. If payments were by cheque, there are clear cost-savings at both ends, although banks' calculations vary considerably, from £8-£18 per cheque. These costs include stationery, producing and posting remittance advice notes, authorising payment, human errors and handling the resulting queries, and reconciling payments to invoices.

These benefits are reduced for companies which already use automated services, such as the UK's Bankers' Automated Clearing Services (BACS) organisation. In these cases, the recipients get most of the benefits from EDI, notably in the form of detailed remittance advice and the possibility of automatic reconciliation. Such information is not provided by BACS.

Whatever the previous payment method used, EDI brings other benefits outside the administration savings. There is certainty about the payment date, which helps with cash flow calculations and removes the need to chase payment.

By contrast, cheques have clearing delays and with BACS there can be delays of two or three days, enabling customers to use the excuse of "it's in the post". Indeed, research shows that a third of all late payments in Europe are intentional.

The UK Article Number Association, which advises on EDI, says that companies using financial EDI tend to initiate payments more quickly. Prompt payment can open the way for discount negotiations.

Most of these benefits are agreed on by banks, EDI associations, users and non-users alike.

> Connections between banks and commercial networks are still too limited

"The payer cuts paper-handling and reduces labour costs, gets good cash management and better discounts for fast payment," says Michel Choueiri, who nonetheless so far rejects the whole idea: he is EDI strategy manager and chief financial officer for purchasing at IBM Europe.

Mr Choueiri highlights two main areas where progress is still needed:

First, the banks themselves need to look at their operations: he says not all banks across Europe offer financial EDI; some use their own sub-sets of EDI standards, thus tying companies into their services and making communication between banks uncertain; and there is not enough connection between bank networks or between bank and commercial networks.

This last point again means customers are forced to connect directly to a bank's network instead of using an EDI service they are already linked to, although both banks and users argue that a direct link can be more acceptable from the security point of view when payment messages are involved.

Gary Lynch, chief executive of the UK EDI Association, believes all this reflects banks' traditional view that they know best: "Banks are used to telling customers what they want," he says.

Mr Lynch goes further: "The banks have mistakenly seen themselves as hubs in an EDI set-up, whereas it is the big customer, doing EDI with its suppliers, that is the hub; the bank is just another supplier."

The banks seem to be getting the message – "frustrated bankers say there has been incomplete appreciation of the benefits," says Saif Rahman, who has long been involved in EDI at National Westminster Bank. "In reality, companies are perfectly able to do their own evaluation. Customers are not interested in just a better way to pay: bankers must offer better ways of doing business."

There are signs that this is happening. For example, direct debits are being introduced for trading partners with close relationships: the supplier initiates payment by an EDI message which passes details to its customer. The supplier gets greater control over payment, so it pays the charges. This overcomes the problem of the BACS-user paying for EDI services when the benefits are enjoyed mostly by its supplier.

However, the second problem area highlighted by Michel Choueiri still remains: cost. Mr Choueiri says he has seen charges of \$18-\$25 for a single transaction in Europe. In the UK, an EDI payment and remittance charge is put at around £1, although some estimates put it at £2.50 – or 10 times the cost of a payment by BACS.

For a company already paying through BACS, there is no contest, on the face of it: financial EDI costs far more and most of the benefits go to the recipient. A company paying by cheque faces a more persuasive case in terms of administration and other cost-savings: Barclays says a company in the UK making 200 UK and 50 international payments a month can save nearly £25,000 a year.

The tiny number of users suggests that companies still have to be convinced. That is why the EDI Association is doing independent work on banks' formulae and assumptions, starting this year with Barclays.

This could make or break financial EDI – "everything is in place technically for financial EDI," says Gary Lynch at the association. "If the business case can't be proved, we as an association should leave it alone and just let it continue as a matter for banks and commerce to argue over."

■ **Service delivery mechanisms:** Research is intensifying, reports **John Williamson**

Quest for new connections

Fibre optics and radio technology may be the answer

For most of the history of the telephone, the vast majority of subscribers have been linked into the nearest telephone exchange by pairs of copper or alloy wires. Over the last few years, however, the pressure to deploy alternative service delivery mechanisms has mounted steadily.

Across the globe, operators are now taking a long hard look at what fibre optics, new add-on high capacity copper technology and radio transmission can offer in the local loop 'last mile'.

Operators have been deploying fibre optics in the telephone network since the late 1970s, progressively extending the application of the technology from international and long-haul links to the middle distance junction network and, most recently, to the local access loop.

In the latter part of the network, fibre could be the optimum solution if operators plan to deliver high bandwidth multi-media, ultra-fast data and multi-channel video-on-demand (VOD) services. However, although companies such as Colt and MFS have built local fibre access networks for corporate customers in metropolitan conurbations, such as London, and national operators such as Deutsche Telekom, have commenced ambitious projects to install fibre-to-the-home (FTTH) and fibre-to-the-kerb (FTTK) systems, actually running fibre directly into homes is still a relatively expensive proposition.

Although the price of fibre itself is no longer much of an issue, components needed to convert light and electrical energy are still expensive, and fibre installation costs are high. It is also true that fibre has to be quite widely deployed before service providers and network operators can market their products to the potential customer base.

This is also a consideration for hybrid fibre coax (HFC) networks. Here, fibre takes traffic into a neighbourhood area and the end links to the actual customers are provided by twinned coaxial cable and copper pairs or, most recently, coaxial cable by itself.

The sums of money required to deploy HFC on a mass scale are enormous. In the UK, for example, the cable TV community has already invested over $4.5bn to pass 4.5m homes with HFC networks, and the price tag to cover 75 per cent of the country's population with this technology is put at $15bn, minimum.

On the other side of the world, Australian telco Telstra is stumping up A$4bn to take HFC past 4m households, while arch-rival Optus Communications is spending A$3bn to be within reach of 3m.

Nevertheless, HFC is still presently a lower cost option for an operator than 100 per cent fibre. "Prospects For Competition In The Local Loop", a 1995 report from the UK's Analysys consultancy, suggests that in urban areas the annualised capital cost per connection for new build HFC is less than half that for FTTH. Although HFC capacity is much smaller than that of all-fibre, there are those who reckon this is not a big worry in the immediate term.

> Systems to convert light and electrical energy are still expensive, and installation costs are high

Of his company's HFC customers, Optus Communications' chief operating officer Ian Boatman says: "If they want to take one or several television set feeds into their homes, it's not a problem. If they want to operate one or several Internet or voice connections at a time, it's not a problem. I can't conceive of too many homes, or even too many small businesses, with a bigger requirement than that."

Other approaches to delivering greater bandwidth to end-users involve scaling up the performance of the extant copper distribution network. This is why some operators have invested heavily in Integrated Services Digital Network (ISDN) since the mid-1980s. ISDN provides capacity in increments of 64,000 bits per second. So far, though, the technology has not percolated through to ordinary subscribers and, according to Alberto Zanettin, strategic marketing manager at Philips' French subsidiary TRT Experdata, it is still virtually impossible to buy a domestic ISDN telephone or answering machine.

TRT also believes the local loop is the blind spot in visions of true mass Internet usage. In September the company began test-marketing modems specifically designed for domestic users. Available in department stores and priced at around £200 for 28,800 bits per second performance, the modems are intended to speed up access to the Internet and other on-line applications.

The commercialisation of new copper-based technologies which run much faster still is also under way. Asymmetric Digital Subscriber Loop (ADSL) is an add-on digital data transmission technology. Locating ASDL boxes at either end of the link between the subscriber and the local telephone exchange enables traffic to run at speeds of several million bits per second in the exchange-to-customer direction, and several thousands of bits per second in the other.

This sort of performance makes ADSL an interesting candidate for the provision of VOD and inter-active multi-media services over the telephone network and, indeed, many telcos around the world are trialling the technology.

Many of these trial installations have been supplied by Westell International, the specialist US transmission vendor which in August introduced what it says is the first commercially available internationally standardised ADSL system. Westell president and CEO Rob Faw predicts that technologies such as ASDL could alter the entire balance of the telecoms business.

A brand new copper-based technology developed by fellow US enterprises AT&T Bell Laboratories and AT&T Paradyne could help this transformation along. Dubbed symmetric digital subscriber line (SDSL), it operates at up to 1.554m and 2.048m bits per second in both directions, which is more than 70 times faster than currently available modems.

"This technology will allow worldwide phone companies to make the information superhighway as universally accessible as today's telephone, radio and television services," declares AT&T Paradyne director of business development Clete Gardenhour.

While microwave video distribution systems have been used to deliver high bandwidth traffic, a main thrust of wireless local loop (WLL) systems is to enlarge access to basic narrowband dial tone.

The chief advantages of substituting wireless systems for copper can be summarised as: reduced cost of subscriber connections in rural areas, faster service roll out and so earlier access to revenue, and reduced network planning requirements in terms of allocating capacity to present and future subscriber numbers, densities and locations.

Also, the WLL demand curve can be matched quite closely to the level of operator investment. Some of the most active WLL markets to date have been in eastern Europe and the former Soviet Union where telephone densities are relatively low.

Earlier this year a 50,000 line capacity WLL network supplied by Hughes Network Systems was inaugurated in Tartarstan, and Hungarian national telco Matav signed a deal with Motorola for the supply of 200,000 lines of WLL equipment.

Such developments may only be the tip of a global WLL iceberg – "right now, if you were just to take our top ten markets – markets with long waiting lists and some reasonable GDP – and just take a percentage of that group, I'd say you'd have 140m people who have an urgent requirement for a telephone," concludes David Hughes, vice president and general manager of Motorola's European cellular infrastructure division.

Advances in fibre optics: see page 28

■ **Transport telematics:** Innovation by Bosch of Germany. Report by **Michael Dempsey**

'Bottlenecks ahead: turn left'

The German auto electronics giant has the business travellers' interests at heart

No need to get lost: Bosch's Berlin car radio system can give voice directions on the best way round 650,000 German streets

"A busy businessman who travels a lot doesn't want to rely on maps all the time," says Stefan Buchansteiner, navigational systems marketing manager at Bosch.

In co-operation with Mercedes, Bosch has launched a voice activated system called "Travelpilot". It tells the driver where to turn and relies on data from the satellite-based Global Positioning System to locate his vehicle.

Sensors attached to the wheels measure the distance covered in a journey and match this up with the GPS signal to determine the position of the car.

GPS signals are only accurate to within 100 metres, so this extra data is very necessary. At the start of a journey the driver uses an operating unit to key-in four numbers corresponding to his destination. A cursor can be used to point to the road required in the small pictorial map display.

But Travelpilot has already been surpassed by Bosch's Berlin car radio. This dispenses with the street map display and calculates the most effective route between two points on behalf of the driver. Speech output informs the driver that he is approaching a junction. As an additional aid a shaded bar graph decreases as he nears his turning point. The idea is to offer realistic navigation bearing in mind the distractions and stress of city motoring conditions.

The heart of the Berlin system is a database that lists not just streets but the one-way regulations and traffic flow details that make the difference between a quick trip and a frustrating journey. This programming inevitably slows up the roll-out of the Berlin system. It is currently available in a version storing 650,000 German street kilometres and 2.5m intersections.

For other European nations, Bosch has to find ways to deliver a regular update of new road conditions as well as constructing a formidable database of city streets. CD-Rom disks are the chosen method of storing this material. These will be sold to the public or accessed via a car dealership. Berlin car radio incorporates a CD-Rom drive along with stereo and radio functions from Bosch's Blaupunkt subsidiary and adds some £2,800 to the price of a car.

The Berlin system is impressive, but it is not aimed at a mass market. Bosch itself recognises that traffic flow is a serious problem as car-ownership rises and road congestion reaches an unacceptable level. The most advanced systems on board executive cars cannot prevent urban traffic jams. Computer-based analysis of traffic data and beacons that use this information to limit access to congested areas and vary toll collection in order to deter traffic entry are all under consideration in Germany. Road traffic there has increased by 50 per cent since 1980.

These developments are all part of a new dimension in car design called Transport Telematics. This term embraces a raft of technologies that are making the transition from testbed to commercial product.

The overall objective of transport telematics is to provide the driver with high technology tools for collision warning or cruise control. Microwave radar emitters that sit behind a registration plate and spot vehicles ahead regardless of weather are under development. Traffic lights will acquire the ability to react to the presence of traffic instead of obeying crude timers.

The challenge for research teams is to integrate these systems into one range of equipment that is effective and affordable. In the UK, the £100m state-sponsored Innovative Manufacturing Initiative is tackling these issues. A strong base in defence electronics has placed UK companies in a good position to exploit these emerging technologies.

One of the dilemmas of transport telematics is familiar to military engineers. As the car acquires a collection of computer chips and electronic systems it becomes vulnerable to electromagnetic interference. Computers are now being used to model the impact of every possible radio transmission on in-car systems. This process is well-established in the aerospace sector and car designers have been able to borrow heavily from defence-related experience.

These solutions to the once simple question of getting from A to B are all on the horizon. But communicating via a carphone has become utterly commonplace, although some practical problems have been overlooked in the rush to install these popular gadgets.

Another innovation is the personal communications network (PCN), promoted in the UK by the Orange arm of Hutchison Telecom. PCN operates on a different frequency, delivering four times the capacity of the earlier technology. Orange Data, a service running on PCN, enables users to send faxes and electronic mail by plugging a mobile phone into a laptop computer. Orange is banking on the emergence of a mobile professional workforce to boost this service. Car kits are available and the company predicts that in the UK alone a million people will use mobile data solutions by 2004.

Unless a miraculous solution emerges for traffic congestion, a lot of those users will be executives who have abandoned the stress of a traffic jam and pulled over to work from their car.

■ **View from the top: Sir Iain Vallance,** chairman of British Telecom, looks at the future of the 'Itec' industries – information technology, electronics and communications

Heading for one of the biggest games in town

Today sees the opening of Telecom 95 in Geneva, Switzerland – a world showcase for all that is new in telecommunications products and services. The previous Geneva event was held four years ago.

In this article, Sir Iain Vallance, chairman of British Telecom, reflects on the changes in telecommunications since Geneva 91 – and looks forward what the next four years will bring.

□ □ □

If a week is a long time in politics, four years in an industry that is changing as fast as telecommunication is a generation. Since the last industry showcase in Geneva in 1991, telecommunications everywhere, but particularly in the UK and in Europe, has undergone extraordinary change.

There are two key challenges facing telecommunications companies between now and the year 2000. The first is globalisation – as businesses increasingly operate globally, so they are looking for suppliers who can provide a "one stop shop" for all their communications needs around the world. Partnering will be a key enterprise skill in the future in the achievement of globalisation. We can confidently expect a spate of alliances across national and industry borders.

The second challenge is the development of advanced, interactive services – the construction of the information society. The accelerating convergence of the telecommunications, consumer electronics, entertainment and publishing industries will have a profound impact on the way we live and work. But, the pace at which the information society is constructed will depend largely, on the structure of regulatory regimes around the world.

In the 11 years since privatisation, BT has invested more than £20bn, building one of the most advanced networks and some of the most advanced computer systems in the world. Just a few months ago, *BT became the first major network operator to replace unit charging with per second pricing for all its customers.*

BT has changed from an essentially single country operator to a global player. We have formed what we believe is the defining strategic alliance with MCI, the US's second largest long distance carrier. Together, we have launched our joint venture company, Concert, providing global communications solutions for international companies. In addition to key relationships in the Asia-Pacific region, we have announced a series of deals with European partners in Spain, Germany, Italy and Scandinavia. The *ultimate objective of all these* alliances is to provide customers around the world with a choice.

Not only are we operating in new regions, but we are dealing in new products and services. Four years ago, the mobile phone was almost exclusively a business accessory; now there are nearly 4m mobile users in the UK alone.

Studies suggest that in five years' time there could be more than 13m users in the UK and more than 250m worldwide. The mobile market could then be worth more than £150bn.

But the main difference between the world of telecommunications in 1991 and in 1995 is that of greater freedom of choice. Millions of customers around the world are now able to enjoy the benefits of competition in telecommunications services. Most notably in data services, but increasingly in basic voice telephony.

Consider the UK: in 1991, the UK Government ended the BT and Mercury duopoly, and opened the market to cable TV companies and others. Four years later, the UK was the most open and competitive market in telecommunications anywhere in the world. But, unfortunately, in the vast majority of European countries, telecommunications companies remain government-owned monopolies. And although data and private circuit services have been liberalised, progress has been slow and patchy. The liberalisation of voice telephony is not scheduled until January 1998, in spite of the fact that, according to business leaders, this is a key factor determining European competitiveness in world markets.

Greater emphasis and added impetus is needed in developing pan-European regulation. Greater consistency between member-states is essential if there is to be any hope of a single European market in telecommunications emerging post-1998.

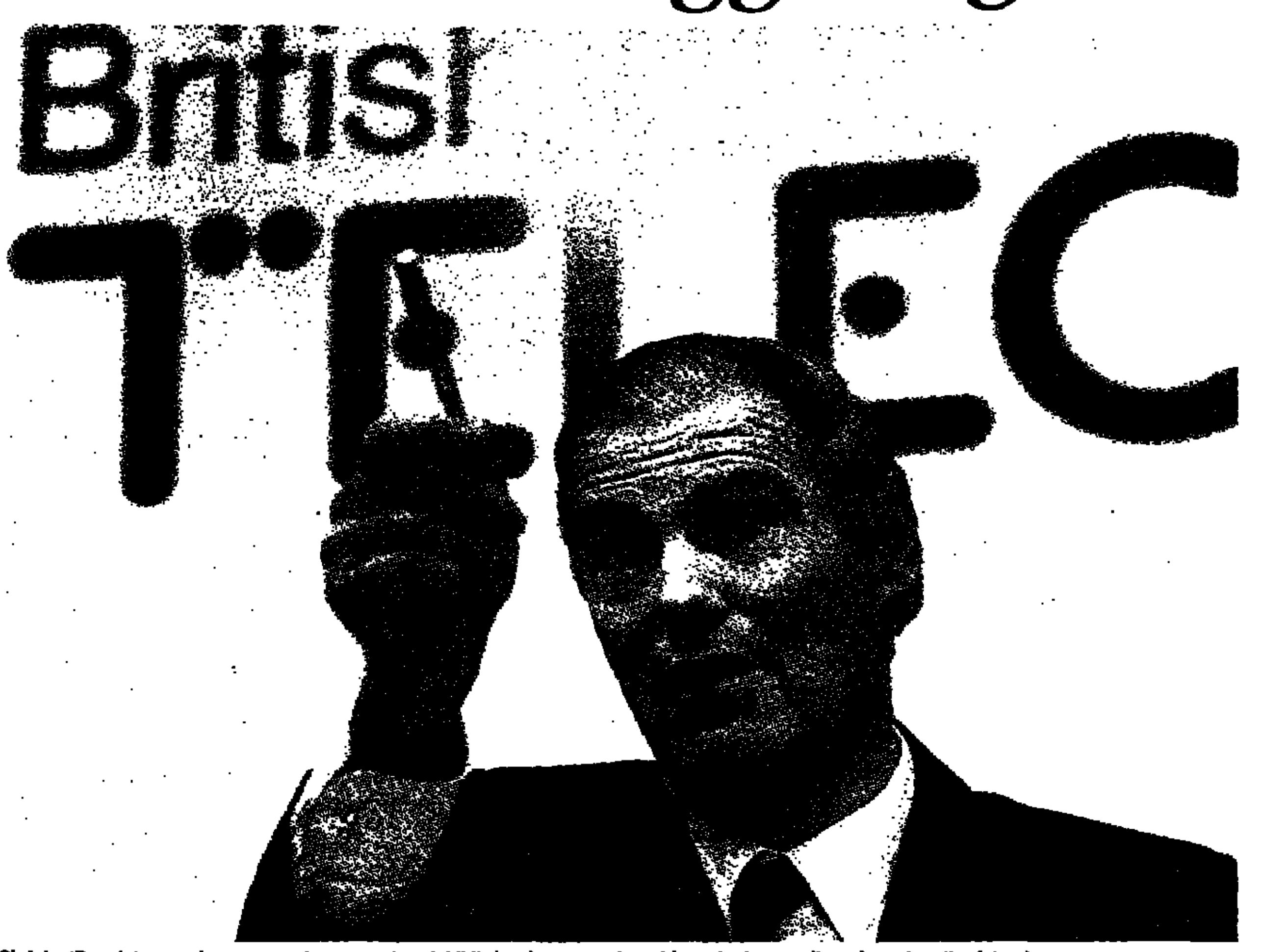
So what of the next *four* years? Estimates are that the ITEC industries – information technology, electronics and *communications – could be* worth 10 per cent of world GDP by 1999. Competition for that market is sure to intensify. It will be one of the biggest games in town.

But, much can be done *now.* Existing technology is capable of carrying new services much more efficiently than was hitherto imagined. ISDN links, data compression, multimedia, and embryonic virtual reality techniques are already fostering more natural and intuitive ways of presenting and sharing information.

In the next few years we will see developments in on-line education, more flexible organisational structures, more use of interactive sales and marketing techniques, more sophisticated home entertainment, and so on.

In the UK, BT has just launched one of the world's most advanced and extensive marketing trials of interactive TV, offering – in conjunction with more than 100 partners – a host of services including movies, games and television programming on demand, home-banking and home shopping, local information services and interactive advertising.

The technology is there and the customer demand is there. In an industry that is as customer-driven as telecommunications, what the customer wants and technology can provide, the customer will ultimately get. Regulators and governments can seek to slow and inhibit developments but *ultimately they cannot work* against the future. By the time Geneva 1999 comes around, the world will look very different from today. We look forward to an exciting future.



Sir Iain: 'Regulators and governments can seek to inhibit developments, but ultimately they can't work against the future' Picture by Ashley Ashwood

■ **Network management:** Report by **Michael Kenward**

The goal: right data at the right time

Buying in services does not have to mean losing control of the network

A company's telecoms network can have a profound influence on the way in which it operates. Management revolves around information which, in turn, relies on effective communications to get it into the right hands. With so much corporate information held in computers, data communications can be as important as the telephone and the fax machine.

Before a company can re-engineer its management processes, it may well need to redesign its telecommunications network, to put into place systems that put the right data in the right place at the right time. This is particularly important for companies that operate internationally.

"We are working for a company that operates throughout the world, but has never operated as a global company," says John Simmons, a senior consultant in the Telecommunications Consultancy Group at Logica, in the UK. The client is moving towards global operation and "they want the infrastructure to support it", says Mr Simmons.

Until recently, companies could not operate globally with ease. Public communications networks just were not up to the task. All this has changed, says Mr Simmons.

Telecommunications started to improve 10 years or so ago in the US. In the past five years, *competition in Europe* means companies can now obtain the communications facilities they need to manage their operations as they see fit.

One consequence of the poor telecommunications of the past was that companies wanting a reliable network effectively had to run their own networks. The rise in quality, and the arrival of competition among suppliers, has opened the doors to a flood of outsourcing. For *example, at the end of May,* BT and the NatWest group signed a £350m five-year contract under which the banking group transferred hardware, people and networks to BT.

Another powerful driving force that persuades companies to contract out their network management is the desire to focus on essentials.

Companies may be prepared to buy in telecoms services, but they still want to be reassured that they will get good quality. One way to provide this confidence, and some control over their own links, is for customers to monitor the telecoms services they buy in. More *and more* customers are specifying network monitoring when they seek tenders from telecoms suppliers, says Peter Beevor, general manager, networks, in the Business Networks division of Cable & Wireless. C&W recently started trials of a system designed to do just this.

C&W's Integrated Network Magement System (INMS) allows customers to monitor their telecom networks with little more than a desk-top computer and a telephone link into C&W's own network. The aim of INMS, says Mr Seevor, is to satisfy the customer's desire "to be in constant touch and to see what the carrier is doing".

The INMS monitoring system also provides communications with the telecoms supplier, so customers can request changes in their system, increasing capacity in one region while reducing it in another, for example. They can *also receive billing information* and details of faults and their correction.

C&W can only offer customers information on their networks because like other telecoms companies, it has invested heavily in its own network monitoring and management technologies. In the UK, for example, one of the world's most competitive telecoms environments, Mercury recently invested £5m in its Transmission Network Surveillance System (TNSS), described as a "network early warning system".

> A big issue is how to maintain customer loyalty

With 9,000 monitoring points, Mercury claims that TNSS is one of the largest systems of its kind in Europe. The system monitors Mercury's 8,000km "backbone" of fibre-optic and microwave radio links and thousands of lines connecting businesses to the company's network.

With TNSS, network managers use computer-animated maps to show them the state of the network. "Not only can we point out a piece of equipment which has already failed," says Steve Graham, TNSS project manager, "we can often see where a part of the network is in a condition where it might be about to fail." The network managers can then reroute traffic and solve problems before they disrupt service. TNSS is also a valuable diagnostic tool when responding to customer complaints.

Network management is *becoming* increasingly sophisticated as new technology arrives on the telecom networks. For example, the communications company GPT's synchronous digital hierarchy (SDH) is, says Peter Blackledge, *product* manager for equipment management operations systems, "the first transmission technology to take account of the needs of network management".

SDH, developed at GPT's Nottingham centre, is not itself a network management system. It is a digital transmission standard that combines telecommunications traffic from different sources and carries it over the same network.

Mercury claims to have been the first company in the UK to employ SDH techniques in its network.

Built into SDH, there is enough capacity to carry a significant amount of information about the state of the network itself. And for the first time in a transmission standard, SDH includes internationally agreed standards for network management information, enabling different suppliers to build compatible hardware and software. *There is, though, some way to* go before the industry reaches this stage, says Mr Blackledge. "Not enough of the standards are in place to be able to pick anybody's kit and anybody's management system and guarantee that they will be able to work together," he explains.

Once again SDH provides "a nice user-friendly interface to all this information", says Mr Blackledge, with maps of the network displayed on workstations.

As well as monitoring the network, the management component of SDH can be used to set up new customer circuits, and to respond automatically and within thousandths of a second to the traditional *scenario of a* JCB through the cable. When Telecom Australia wanted to demonstrate the capabilities of its new SDH system, it did so by putting an axe through a fibre-optic link and demonstrating that there was no loss of service.

Reliability and ease of establishing new services to customers are important aspects of any network management system.

Quality of service is crucial to maintaining customer loyalty, agrees *Hugh Jagger, a* partner in the Global Telecommunications Industry Group at consultants Coopers & Lybrand. As competition sweeps through telecoms, says Mr Jagger, "the big issue is *how to keep customer loyalty*".

Another important aspect of network management, says Mr Jagger, is in reducing the cost base. A lot of the cost of running a network, he adds, sits in the management of the network. On the customer's side, cost is inevitably an issue in a company's telecom strategy, but it often takes a back seat to wider strategy, says Mr Simmons of Logica: "A company will decide that they wish to operate globally and will not worry too much about the cost."

With advanced network management systems, they are in a better position to ensure that suppliers are meeting their contractual promises.

Telecom outsourcing and other aspects of network management: see pages 32 and 39

■ **GPT:** Profile of the innovative equipment manufacturer. By **Alan Cane**

Big growth in overseas orders

GPT is close to the heart of the multimedia revolution

GPT is the UK's largest telecommunications equipment manufacturer, active in almost every area of the business. The sole exception, curiously enough, is cellular communications, one of the faster growing sectors of the telecoms industry. If cellular skills and products are called for, however, it is able to exploit the expertise of one of its two parents, Siemens of Germany, an acknowledged expert in mobile communications.

This synergy is an example of the alliances which have marked the company's progress. Formed in 1988 through the voluntary merging of the telecoms activities of GEC and Plessey, *it acquired dual* nationality in 1989 when GEC and Siemens combined to buy Plessey.

Ownership is now 60 per cent GEC and 40 per cent Siemens. Siemens has always indicated its willingness to take a controlling stake if the price was right: so far, GEC has held out for more than the German giant has been prepared to pay and the ownership question seems to have slipped on to a backburner.

Mr Peter Gershon, a tough and financially–acute manager, sometimes tipped as a possible successor to Lord Weinstock as the head of GEC, is credited with placing GPT on a firm industrial and commercial footing. He is now managing director of GEC-Marconi, the group's defence division.

Under its new managing director, Mr Tony Cobbe, GPT last year turned over more than £1bn for the first time, placing it among the top ten telecoms equipment suppliers in the world – although, it has to be said, a long way behind Alcatel, Siemens and AT&T.

The company has some 11,000 employees and four prin*cipal sites* in the UK – Coventry, the headquarters, Beeston, near Nottingham, Liverpool, Coventry and Poole.

In Greece, operators use the ISDX business communications system

It reckons to be a the world leader in two important product areas: payphones, where it sells to more than 70 countries, and synchronous digital hierarchy transmission, key to the information superhighway.

It recently produced its 500.00th payphone as part of a consignment to Thailand. It also claims to be the largest *producer of smart cards in the* UK – plastic cards with an embedded microprocessor which have proved eminently suitable for use in intelligent payphones. Earlier this year it announced the formation of a new Card Technology division, part of GPT Payphone Systems. The division already produces cards based on magnetic, smart and contactless technologies.

Flexibility

SDH, known as Sonet in the US, is a transmission technique now being developed to meet the needs of non-voice traffic – data, video, multimedia and so on – towards the *end of the century.* While voice traffic will continue to increase, it will decline relative to other forms of information as traffic on the information superhighway builds up.

A recent report noted: "The importance of having an a flexible and intelligent network infrastructure based on SDH cannot be overestimated as service offerings are closely related to the ability of this network to be reconfigured as demands change".

So GPT is close to the heart of the multimedia revolution. In May it won a £40m SDH transmission contract from China, involving the laying of 1500 kilometres of the world's most advanced optical fibre submarine cable.

Stretching from Wuhan to Shanghai, its path runs under eight kilometres of the Yangzte River. The cable will be laid by GPT Telephone Cables. GPT says it has now installed SDH networks in the UK, Germany, *France, Belgium and Australia.*

GPT is also strong in videoconferencing. The UK Employment Department, for example, bought almost £1m worth of GPT equipment to enable staff to conduct meetings across 14 sites. On a broader scale, Zeneca, the UK pharmaceutical manufacturer, bought a system enabling the company to link its London headquarters with 85 manufacturing sites worldwide.

The company has seen substantial growth in its overseas business – it more than doubled last year – on the back of big contracts in Russia, China and the Middle East.

These markets will prove important for all equipment manufacturers as sales in the developed world slow. Successes include an order from Greece for payphones which accept UK, French and German currencies in addition to drach*mas;* an £8m bid to supply the world's longest unrepeatered submarine cable link stretching across the Baltic to give Latvia high capacity connection to the Western world and a £50m order for switches from Comstar in Moscow. These advanced areas of expertise will prove critical for GPT as the markets for switching equipment – GPT is best known, perhaps, as the manufacturer of System X the UK's pioneering digital telephone switching system – slows.

Over the past 10 years, equipment manufacturers flourished as operators invested in the digitisation of their networks. This investment has now peaked; more than 70 per cent of BT lines are *now digital, for example.*

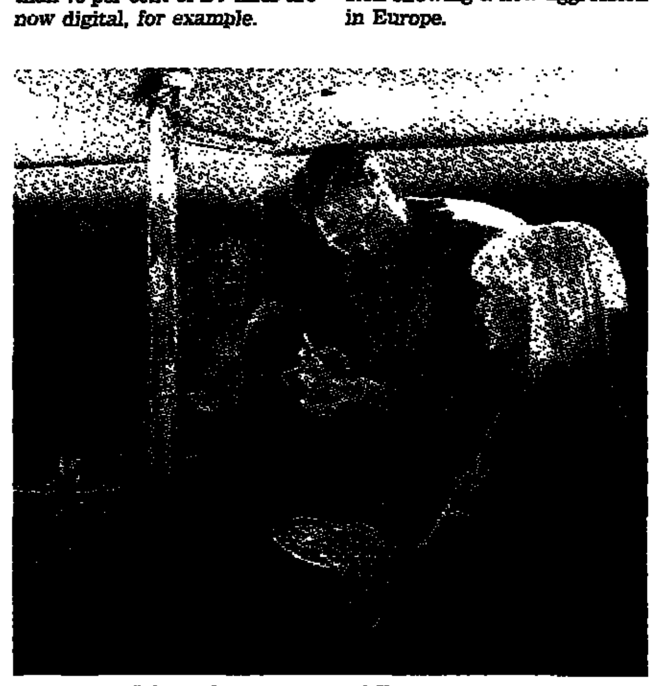
In any case, the emphasis is moving from switch hardware to the software which makes it work. GPT revenues in software are thought to be in excess of £100m a year. An example is the service provider management system which GPT has supplied to Mercury Communications of the UK. This enables it to receive statistics for its FreeCall service for business every few minutes on a personal computer screen.

Over the past few year, the UK market, now fully liberalised, has seen the cable television companies move in to compete in telephony with the traditional operators.

GPT is a leading provider of equipment to the cable operators. Last year, for example, it sold £6m worth of equipment to TeleWest, the largest cable operator, including a single order worth £1m for multiplexers, the devices which enable many communications streams to be transmitted down a single channel. It also installed and commissioned a 100,000 line capacity public network switch for Cable North West.

GPT remains a small player in a large and fiercely competitive market but it has well off parents and skills and expertise of its own. It will need them with the likes of AT&T's newly spun-off equipment division showing a new aggression in Europe.

Chinese orders: more than 540 ISDX business communication systems are now in use in China, serving many customers in government ministries, industrial sectors and universities. In May, GPT won a £40m SDH transmission contract from China, involving the laying of 1,500 kilometres of the world's most advanced optical fibre submarine cable.



Swissair's in-flight services on short-haul flights

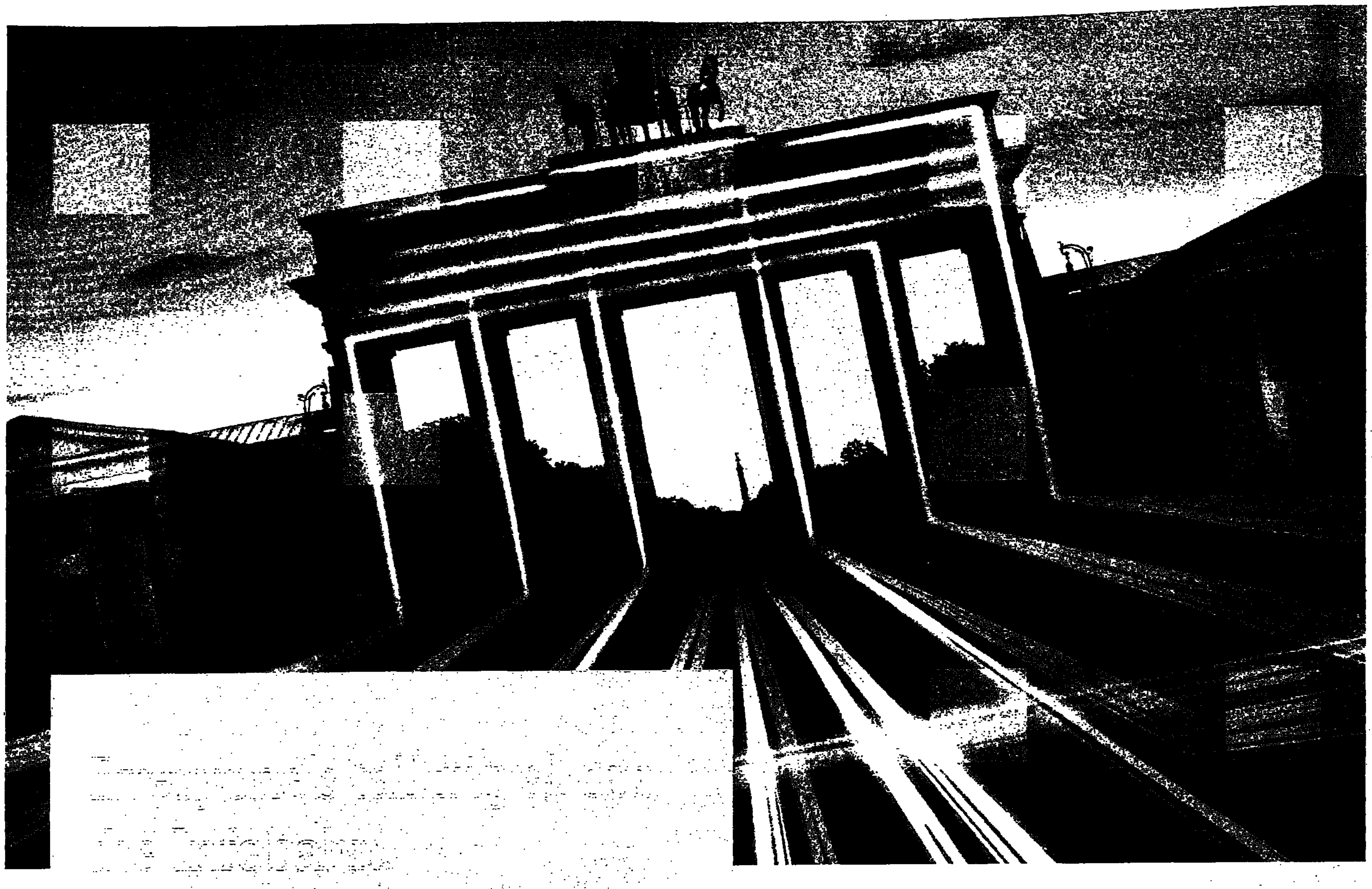
New service launched in airborne satellite communications

At the Telecom 95 exhibition this week, Swissair is launching what is claimed to be the world's first satellite communications (Satcom) service on short-haul aircraft to enable passengers to make *airborne phone and fax calls,* anywhere in the world.

The Racal/Honeywell Satcom team is supplying multi-channel systems which provide uninterrupted communications between the cockpit and ground, bringing enhanced safety and operational efficiency. The Racal/Honeywell team has also announced the world's first passenger in-flight shopping and information service, developed in partnership with British Telecom's airline interactive services (Alis) processing centre.

Racal Electronics, of **Bracknell, Berkshire, has annual sales of close to £1bn. The group is featuring a broad range of voice and data communications technologies in the British Pavilion at the *Geneva show this week.***

For more news on satellite technology, see page 32 in the second section of this survey

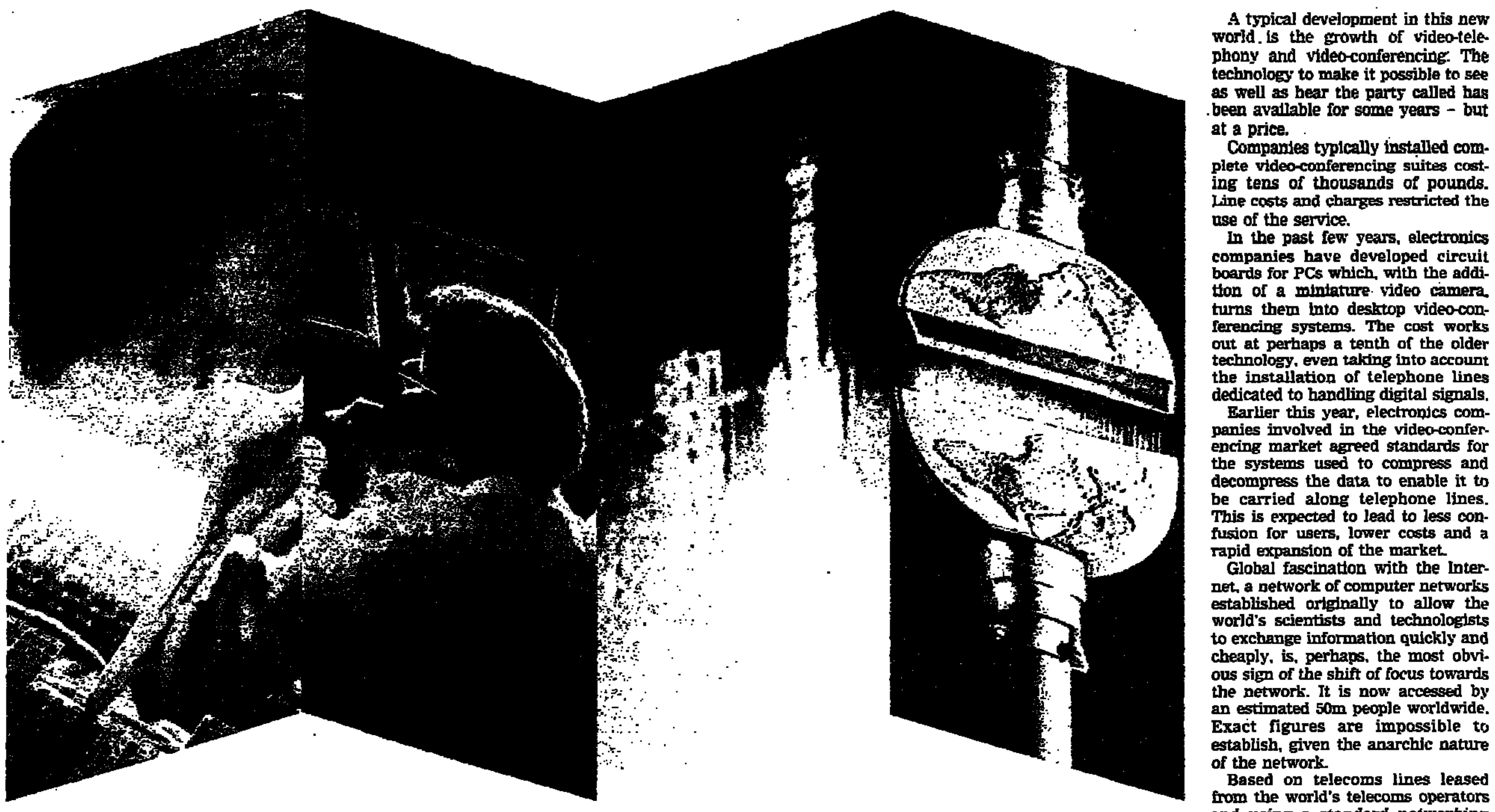


هكذا من الأصل

هكذا من الأصل

International TELECOMMUNICATIONS

SECTION 2



Era of 'the information society'

New technology is leading to global networks which connect subscribers to a wealth of information and entertainment, available on demand, but the future may not be entirely comfortable for many of today's players, writes Alan Cane

Consider these companies – Intel, the chip maker; Lotus, developer of workgroup software; Oracle, *database specialist* and Sun Microsystems, workstation manufacturer – all sectors which help form the mainstay of the computer business.

Yet they, and a host of other computer companies, are making an appearance at Telecom '95, a vast showcase for the communications industry in Geneva this year, along with the AT&Ts and Alcatels, in one of the most convincing signs of the emerging convergence of communications, computing and content. Examples of the newest technologies, including digital television and video-on-demand, will be on display.

The focus of the information technology business seems now to be shifting from the personal computer to the telecommunications network with profound consequences for personal computer suppliers, software developers and telecoms operators.

Mr David Moschella, a senior consultant with the International Data Group, told a conference earlier this year there was "a broadly-based conviction that convergence is going to happen, bringing telephone–like capabilities to the computer industry". He thought it might be 2030 before a true "information society" emerged, where global networks connected subscribers to a wealth of information and entertainment, available on demand.

The future may not be entirely comfortable for many of today's players. The personal computer industry, for example, could be threatened by the emergence of intelligent networks able to transmit large quantities of information at high speed.

PC-users are already complaining of overload caused by rapidly advancing technology. They object to paying for equipment which is obsolescent by the time it is unpacked. They resent software of such complexity that it requires a trained computer operator to load and run it. "Windows 95" Microsoft's latest PC operating system is larger in size and more complicated than mainframe operating software of 10 years ago.

One answer is a "dumb" terminal, or perhaps a terminal of limited intelligence such as a games console, provided with both information and processing power through a network. There are powerful implications here for any industry whose product, especially software, can be distributed in electronic form. Mr James Clark, chairman of Netscape Communications, a US company which has developed Internet software, told a conference last month that he had been able to distribute copies of his software to 10m "customers" in nine months – "we distributed free copies for evaluation at practically no cost to ourselves".

Mr Clark said he was confident that encryption technology had reached such a state of development that his software could be distributed without fear of illegal copying – "this combination of low cost and protection will have a revolutionary effect on the distribution of software and other intellectual property".

The driving force for this revolution is technology, and in particular the emergence of broadband transmission techniques which have made possible multimedia – the combining of different kinds of electronic data including audio, video, text, graphics, facsimile and telephony in the same delivery channel whether it be fibre optic, satellite transmission, coaxial cable or even copper wire. According to Price Waterhouse, the technology consultancy, "the multimedia systems under development today resemble the potential result if all the gadgets in the office plus a few from the home were plugged together. The desktop computer is beginning to receive and organise faxes, voice mail, videophone calls and electronic mail, re-routeing them as needed".

A typical development in this new world is the growth of video-telephony and video-conferencing. The technology to make it possible to see as well as hear the party called has been available for some years – but at a price.

Companies typically installed complete video-conferencing suites costing tens of thousands of pounds. Line costs and charges restricted the use of the service.

In the past few years, electronics companies have developed circuit boards for PCs which, with the addition of a miniature video camera, turns them into desktop video-conferencing systems. The cost works out at perhaps a tenth of the older technology, even taking into account the installation of telephone lines dedicated to handling digital signals.

Earlier this year, electronics companies involved in the video-conferencing market agreed standards for the systems used to compress and decompress the data to enable it to be carried along telephone lines. This is expected to lead to less confusion for users, lower costs and a rapid expansion of the market.

Global fascination with the Internet, a network of computer networks established originally to allow the world's scientists and technologists to exchange information quickly and cheaply, is, perhaps, the most obvious sign of the shift of focus towards the network. It is now accessed by an estimated 50m people worldwide. Exact figures are impossible to establish, given the anarchic nature of the network.

Based on telecoms lines leased from the world's telecoms operators and using a standard networking technology, it has neither owner nor regulator. It is remarkable therefore that governments, banks, bakeries and media groups have invested time and money in establishing Internet sites.

The present anarchy cannot continue, however. Will the international telecoms operators eventually regain control of the Internet? Some, but by no means all, believe this is inevitable. A survey among telecoms users carried out by the consultancy Wolff Olins for the Financial Times suggest that today's telecoms operators lack the vision to become global communications companies.

Its report says that "some 78 per

Continued on next page

INSIDE

Editorial production: Michael Wiltshire

The superhighway: Standard telephone links are too slow, reports **Philip Manchester**

Bandwidth gap needs bridging

The multimedia information superhighway is still far from reality

The information superhighway and multimedia computer technology are natural bedfellows. The ability to transmit images, audio and video over the telephone network makes the information superhighway attractive both to businesses and to the home computer user. And digital networks are an obvious way to distribute multimedia information in all its forms.

Expectations have been raised by manufacturers and suppliers in recent months. They have seen networked multimedia as an exciting new opportunity. In addition to Microsoft's highly public campaign to promote its own network with multimedia content on the back of the new Windows 95 operating system, both IBM and Apple have promoted Internet connections and access to multimedia content in recent months.

But there is a big gap between the promise of a genuine multimedia information superhighway and the reality. A simple colour image, for example, takes several minutes to send over standard telephone links and a few seconds of audio or video takes even longer.

Multimedia content such as audio and video demands large data capacity and high-speed communications – neither of which is within reach of small to medium-size companies and home users. The technologists call this bandwidth and, which ever way it is looked at, there is not enough of it.

Despite significant advances in modem technology, the average desktop computer can only expect to communicate at a maximum speed of 28,800 bits per second – which is way too low for audio and video and even unsatisfactory for single images. Realistically, multimedia communications needs a bandwidth of at least two million bits a second.

Coincidentally, this is the operating bandwidth of the new wave of entry-level integrated services digital networks (ISDN) and, despite a connection cost of £2,000 plus, businesses are beginning to take to it.

Multimedia video-conferencing: British Telecom expects an increasing demand for such products as the PC Videophone

"This seems to be the level at which useful multimedia can be achieved and companies in the graphical image distribution market are starting to use it. We also have customers for our two megabit Switchband service in the medical sector, in education and museums," says Mr Phil Sellick, ISDN product developer at Mercury, the UK telecommunications company.

Barrier to progress

He goes on to say that the biggest obstacle to wider use of ISDN for multimedia communications is what he calls the cost/value barrier – "many companies want to use it, but they cannot justify the cost against the value that they can get out of it unless they are working in an area like graphics distribution," he says.

"We recognise that we have to make ISDN a commodity network service and we are approaching this by exploring partnerships in niche markets as a basis for future growth."

The complexity of ISDN and the lack of international standards also acts as a barrier to further progress, he adds. Generally, he does not see current technology as good enough to support multimedia: "The Internet is a sort of *beta* test of the technology. But the technology deployed on Internet is not going to adequate for multimedia."

He sees the advent of more flexible technology as the long-term answer. Asynchronous Transfer Mode (ATM) technology, for example, offers much greater bandwidth.

"ATM will be the final piece in the jigsaw. It will be the technology that takes the information superhighway into multimedia," he says. ATM technology has the benefit of international support from telecommunications suppliers and the ability to meet the bandwidth demands of multimedia. But it is relatively expensive and likely to remain so for a year or two.

Meanwhile, distribution of multimedia content is likely to remain on increasingly popular CD-ROM technology – "there are two key drivers in the development of multimedia: first, the marriage of the PC and the network. All PCs now come with some sort of communications capability. Second, the explosion of CD-Rom. About 90 per cent of new PCs have a CD-Rom drive and I see CD-Rom becoming the main method of distribution for some time," says Mr Steve West, a multimedia specialist at the US software company EDS.

EDS has, for the first time, used CD-Rom to distribute a multimedia version of its annual report this year. It also has plans to make the report available over the network – although Mr West sees some barriers to this.

"There are several issues. For one thing, business users get frustrated with the telephone system because it does not match the speed of their internal local area networks (Lans). For another, there are legal and regulatory issues surrounding the distribution of content which will run well into the next century."

Along with Mr Sellick of Mercury, Mr West also sees problems with standards – this time in the multimedia content rather than the telecommunications network.

"They are not as robust or harmonised as we would like to see. There are lots of different formats for images and video clips – JPEG, GIF, MPEG2, M-JPEG. It is difficult to provide all of them. When we set out to prepare our annual report on CD-Rom, for example, we were forced to adopt a lowest common denominator approach so we could reach the largest audience. The same goes for networked multimedia."

Mr West sees the world as being trapped between current 'dial-up' services with their low speed and the future broadband technologies such as ISDN and ATM – "before we can say we have ubiquitous broadband communications we have to bridge the last mile between the communications backbone and the desktop. Meanwhile, the network has to compete with CD-Rom as the primary distribution method for multimedia".

This has not stopped some pioneers going ahead with putting up multimedia 'titles' on the information superhighway. Hachette Filipacchi Magazines (HFM), the New York-based publisher, announced last month that it had published *Car and Driver*, the world's largest car magazine, and *Elle*, the top-selling fashion magazine, on the World Wide Web. Working with EDS, it also plans to put several other leading magazines on to the network in 1996. It remains to be seen how many 'readers' will opt for the networked version in preference to the glossy copy on the newsagent's shelf.

The Internet: A business ethic takes over, reports **Louise Kehoe** in California

Capacity crunch gets worse

The Internet has become an anomaly in the telecoms world because user-cost is not related to distance

Explosive growth in both business and personal use of the Internet is creating bumper-to-bumper data traffic. To keep pace with rising demand, telecommunications carriers are rushing to upgrade and expand the infrastructure of this global web of computer networks.

From 1990 to mid-1995, the number of computers connected to the Internet rose from 130,000 to 4.8m. Each computer can represent from one to thousands of individual users. Today, more than 50m people across the world access the 'Net, now an *ad hoc* network of computer networks without ownership or management, every day.

In the US and western Europe, which are served by high-speed Internet "backbones", and hundreds of local Internet access-providers, users frequently suffer delays or are unable to connect to popular Internet sites.

In other parts of the world where Internet access is limited to low-speed links, there are even greater problems. Industry experts predict that the Internet capacity crunch will get even worse as multimedia applications with graphics, sound and video become more widespread. Already, the graphics-rich pages of the World Wide Web have increased US Internet traffic ten-fold over the past few years.

To meet rising demand, telecom carriers are expanding and upgrading their networks. Three of the largest US providers of Internet services, MCI, Sprint and ANS, a unit of America Online, have agreed to link their Internet networks for direct exchange of traffic. The agreement means that messages and data sent by Internet users via the three groups' networks will arrive faster and with greater reliability.

All US Internet traffic is routed via one of a handful of exchanges, or access points. MCI, Sprint and ANS will in effect shorten the distance that data must travel by creating direct links among their networks.

Separately, Sprint – which claims to handle more than half of all the Internet traffic to and from the US, undertook a big upgrade of its US Internet links to eliminate network slow-downs and accommodate increased traffic.

Sprint is also building up its international Internet infrastructure. Through agreements with local and national service providers the US telecoms company has this year expanded services in China, Taiwan, South Africa, Russia and Brazil. In Russia, Sprint Networks recently expanded its Internet access service to cover the cities of Moscow, St. Petersburg and Novosibirsk. In China, the US company recently reached an agreement to link all universities, schools and research institutes by the end of this century.

The Japanese unit of Cable & Wireless unit is planning to launch an Internet service there this month with direct network connections to the US, Hong Kong and Europe.

MCI, similarly, is expanding its Internet services in the US for both consumers and businesses. Together with NTT of Japan, MCI is also creating a high speed Internet link between the US and Japan.

> To meet rising demand on the Internet with its 50m users, telecom carriers are upgrading their networks

Yet the costs associated with expanding the infrastructure of the Internet will eventually be passed along to users, industry experts predict, as Internet access providers move to recoup their investments. Yet one of the primary attractions of the Internet, to date, has been its relatively low costs, compared with private or commercial data communications networks. This stems in large part from the Internet's roots as a US government-funded research network. Now, however, the Internet is fast evolving into a business-oriented communications service. In a move that symbolises this change, the National Science Foundation, a US government-funded entity that founded the Internet, earlier this year decommissioned the NSFnet "backbone" that has until now provided subsidised long distance transport for Internet users.

In addition, the NSF and other government entities have subsidised administrative Internet tasks, including Internet address assignments, development of routing tables, directories and indexes as well as the voluminous work of the Internet Society in overseeing the network. These tasks, as well as the provision of high-speed Internet backbones and network switching centers, are now being passed over to the private sector.

One example of how these changes will affect Internet users came last month when Network Solutions, the company that has taken over the job of assigning Internet "domain names" – the names associated with individual or corporate e-mail addresses and site addresses, such as *ft.com* – instituted an annual fee for registering a name.

Users that forget, or refuse, to pay will loose the right to use their domain names, Network Solutions has warned. All new applicants will be required to pay a $100 fee to register a name for two years, plus $50 a year thereafter. People and

Continued on page 25

Evolution of 'the information society'

Continued from previous page

cent of telecom users state that having a vision is the single most important skill required for the future development of the industry. With the exceptions of AT&T and BT, telecom companies and the industry in general are failing in this area".

It goes on, significantly, to point out: "Media and entertainment groups are perceived as the greatest threat to existing telecom companies by 68 per cent of respondents."

The possibility of the emergence of a single global communications industry may be threatened, in the short-term at any rate, by a significant cultural divide between the telecoms and computer industries. The inability of IBM, the world's largest computer manufacturer, and AT&T, the largest US long-haul carrier, to make much of a mark on each other's territory, despite repeated attempts, is the best evidence of this.

The Internet, free from the regulatory forces which constrain the traditional telecoms industry and the distribution channels which determine the success of a computer company, may prove to be the common ground.

Mr Moschella of IDC introduced his audience to "Metcalfe's Law", originated by the inventor of the Ethernet, a popular technique for networking PCs together. Stated simply, the law holds that as the number of nodes on a network increases, the value of the network increases at a proportionately greater rate. The Internet, significantly, is currently doubling in size each year.

The Internet is an accident of history. Nobody planned that it should play such a seminal role in the evolution of the information society – and it has flaws – but it is pointing the way to a new kind of telecommunications system. The years ahead should see unprecedented opportunities for suppliers and customers alike.

International Telecommunications Map

produced by the FINANCIAL TIMES in association with

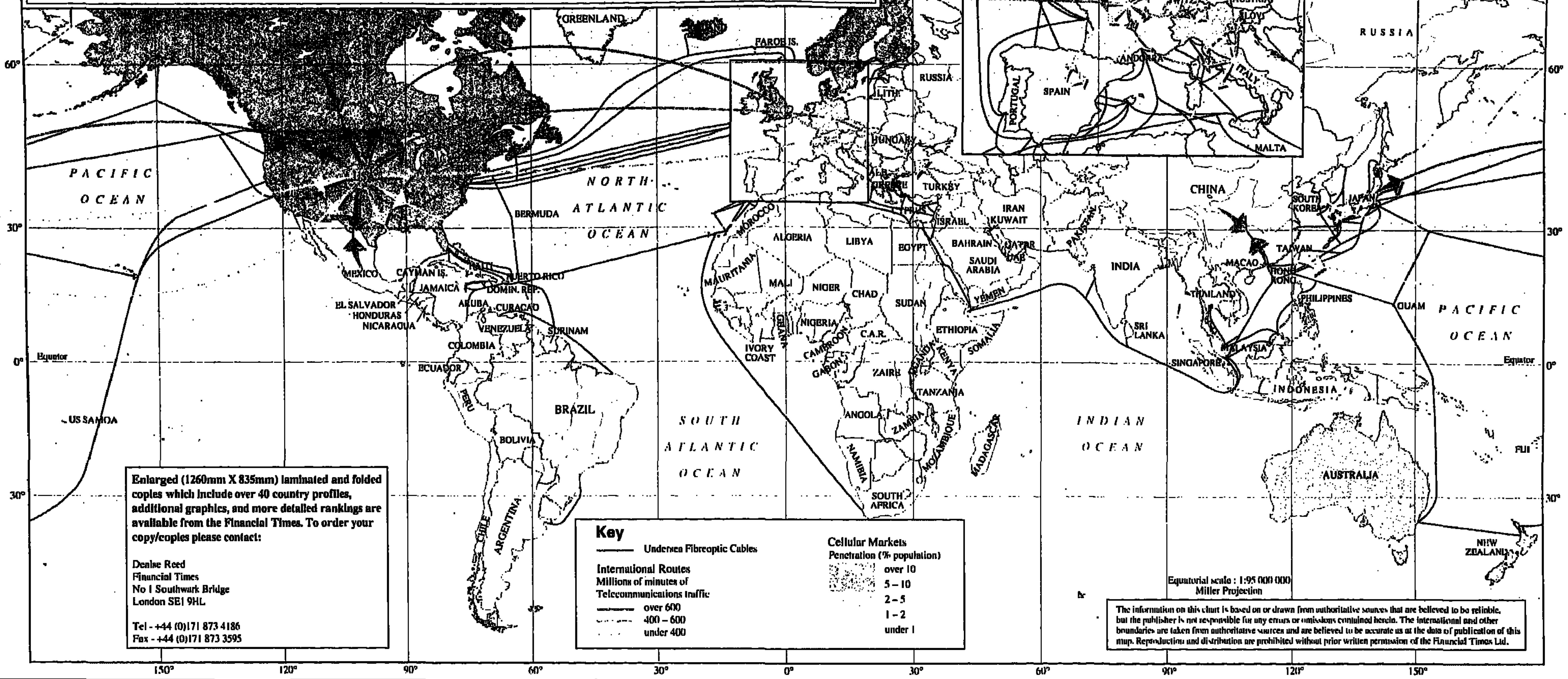
Salomon Brothers

The Global Telecom Research Team

North America Jack Grubman, Managing Director +1 212 783 0568
Sheri McMahon +1 212 783 7352
Europe Douglas Wight +44 171 721 3963
Asia/Pacific Dr Andrew Harrington +852 2501 2732
Latin America Sari J. Mayer +1 212 783 7674

The Global Telecom Investment Banking Team

North America Wendy Dietze, Managing Director +1 212 783 7073
Rand Rosenberg, Managing Director +1 212 783 7251
Europe Jim Cantwell +44 171 721 3217
Asia/Pacific Scott Hawker +852 2501 2064
Latin America David Diwik +1 212 783 5930



Enlarged (1260mm X 835mm) laminated and folded copies which include over 40 country profiles, additional graphics, and more detailed rankings are available from the Financial Times. To order your copy/copies please contact:

Denise Reed
Financial Times
No 1 Southwark Bridge
London SE1 9HL

Tel - +44 (0)171 873 4186
Fax - +44 (0)171 873 3595

Key

Undersea Fibreoptic Cables

International Routes
Millions of minutes of Telecommunications traffic
over 600
400 – 600
under 400

Cellular Markets
Penetration (% population)
over 10
5 – 10
2 – 5
1 – 2
under 1

Equatorial scale : 1:95 000 000
Miller Projection

Forthcoming worldwide telecom privatisations

Western Europe	
Belgacom	Belgium
Deutsche Telekom	Germany
France Télécom	France
KPN	Netherlands
OTE	Greece
Portugal Telecom	Portugal
STET	Italy
Swiss PTT	Switzerland
Telecom Eireann	Ireland
Telefónica de España	Spain
Telia	Sweden
Eastern Europe/Former CIS	
Albanian Telecom	Albania
Lithuania Telecom	Lithuania
Matáv	Hungary
PTT Slovenije	Slovenia
Romania Telecom	Romania
Rostelecom	Russia
Svíaztinvest	Russia
TPSA	Poland
Middle East/Africa	
ARENTO	Egypt
Bezeq	Israel
CITEL-COM	Ivory Coast
Ghana Telecom	Ghana
INTELCAM	Cameroon
Kenya PTT	Kenya
ONPT	Morocco
Telkom SA	South Africa
Türk Telekom	Turkey
UPTC	Uganda
ZANTEL	Zambia
Latin America	
CANTV	Venezuela
EMETEL	Ecuador
ENTEL	Bolivia
Hondutel	Honduras
INTEL	El Salvador
INTEL	Panama
TELCOR	Nicaragua
Telebras	Brazil
TELECO	Haiti
Asia Pacific	
FTPL	Fiji
KDD	Japan
Korea Telecom	Korea
MTNL	India
NTT	Japan
PT Telkom	Indonesia
PTC	Pakistan
PTO	Sri Lanka
Singapore Telecom	Singapore
Telstra	Australia
TOT/CAT	Thailand
VSNL	India

Source: Salomon Brothers

Top 10 countries

By telecommunication services revenue per inhabitant (1994)

50	Surinam	1,791.5
-	Greenland	1,315.7
13	Switzerland	1,000.1
-	Bermuda	891.4
45	Gabon	802.7
31	Singapore	732.5
-	Aruba	713.7
23	Denmark	601.9
21	Hong Kong	597.0
1	US	589.4

Source: ITU

Top 10 world cellular markets

By subscribers (January 1, 1995)

Country	System	Launch	Subscribers (million) 1/1/95	1/1/94	Yearly growth (%)	Pntn (%)*
US	AMPS	1983	24.100	16.009	50.54	9.44
Japan	Various	1979	3.890	2.008	93.77	3.13
UK	Various	1985	3.524	2.000	76.21	6.11
Germany	Various	1985	2.476	1.776	39.45	3.07
Italy	Various	1985	2.240	1.207	85.56	3.87
Canada	AMPS	1985	1.714	1.285	33.39	6.16
Australia	AMPS/GSM	1986	1.697	0.903	87.87	9.68
China	Various	1987	1.618	0.644	151.24	0.14
Sweden	Various	1981	1.387	0.844	64.28	15.93
South Korea	AMPS/CDMA	1984	0.960	0.472	103.54	2.20

* Number of subscribers per 100 inhabitants
Source: Mobile Communications

Top 20 world cellular markets

By penetration (January 1, 1995)

Rank by total	Country	System	Launch	Subscribers 01/01/95	01/01/94	Yearly growth (%)	Pntn (%)* 01/01/95
9	Sweden	Various	1981	1,387,260	844,455	64.28	15.93
17	Norway	Various	1981	590,810	527,810	11.94	13.80
15	Finland	Various	1982	651,551	480,233	35.67	12.87
18	Denmark	Various	1982	509,398	316,261	61.07	9.86
7	Australia	AMPS/GSM	1986	1,697,000	903,300	87.87	9.68
1	US	AMPS	1983	24,100,000	16,009,461	50.54	9.44
26	Singapore	Various	1988	237,000	146,000	62.33	8.42
-	Bermuda	AMPS/TDMA	1987	4,379	2,652	65.12	8.42
-	Iceland	NMT-450/GSM	1986	21,845	17,409	25.48	8.37
20	Hong Kong	Various	1985	445,000	291,000	52.92	7.67
29	New Zealand	AMPS	1987	217,200	120,900	79.65	6.36
-	Cayman Islands	AMPS	1987	1,591	1,146	38.83	6.27
6	Canada	AMPS	1985	1,714,000	1,285,000	33.39	6.16
3	UK	Various	1985	3,524,000	1,999,900	76.21	6.11
-	Guam	AMPS	1990	8,800	n/a	n/a	5.87
42	Kuwait	TACS	1986	76,900	62,200	23.63	5.49
49	Macao	TACS	1988	26,000	16,000	62.50	5.34
-	Neth Antilles & Aruba	AMPS	1988	12,846	7,152	79.61	5.04
22	Switzerland	NMT-900/GSM	1987	329,293	258,227	27.52	4.80
33	Puerto Rico	AMPS	1991	170,000	105,500	61.14	4.76

* Number of subscribers per 100 inhabitants
Source: Mobile Communications

Global telecommunication alliances - Phoenix

PHOENIX

GLOBAL PARTNERSHIP BOARD*
Sprint-Deutsche Telekom-France Télécom
*(equal votes)

Operational units

Rest of World
50% Sprint
50% DT & FT

Rest of Europe
33.3% Sprint
66.6% DT & FT

Products in home markets to be offered by respective parent company. Deutsche Telekom and France Télécom each to take 10% stakes in Sprint.

Source: Salomon Brothers

Global telecommunication alliances - WorldPartners

PTT Telecom (Netherlands) 25%
Telia (Sweden) 25%
Swiss PTT (Switzerland) 25%
Telefónica (Spain) 25%

Unisource

60%
Uniworld
40%
AT&T
40%
20%
WORLDPARTNERS
24%
KDD (Japan)
16%
Singapore Telecom

TCNZ
Telstra
Hong Kong Telecom
Korea Telecom
Unitel
PLDT

Source: Salomon Brothers

Global telecommunication alliances - Concert

The Americas
Rest of the World

MCI
20%
BT
24.9%
75.1%
CONCERT

BT completed its 20% investment in the enlarged share capital of MCI on September 30, 1994.
BT has already established alliances with operators in Denmark, Norway, Finland, Japan and India. It has also established joint ventures in Spain, Italy, Germany, Sweden, India and Japan.

Source: Salomon Brothers/BT

Top 10 countries

By telecommunication service revenues (1994)

Country	Service Revenues (US$m)	Revenue per inhabitant (US$)	Revenue per mainline (US$)	Revenue per employee (US$)
US	152,100.0	589.4	1,027	229,412
Japan	65,858.8	527.6	1,119	n/a
Germany	39,438.0	486.0	1,006	173,278
UK	23,990.4	413.3	876	130,952
France	23,662.3	409.9	749	155,061
Italy	18,047.2	315.8	735	164,065
Canada	10,872.4	390.9	660	129,885
Australia	10,379.6	581.8	1,173	152,641
Spain	9,581.6	242.3	652	132,697
Brazil	7,767.8	48.8	661	79,945

Source: ITU

Top 10 telecommunications equipment vendors

By telecom equipment sales (1994)

Company	Country	US$m	% change 1993-4	% of total company sales	Export sales (%)	Market share (%)
Alcatel	France	20,401	6.8	67.6	72.0	15.8
Motorola	US	14,389	42.9	64.7	44.0	10.8
AT&T	US	14,279	21.2	19.0	9.8	10.7
Siemens	Germany	12,779	-3.1	24.5	58.0	9.6
Ericsson	Sweden	10,699	35.8	100.0	90.0	7.4
NEC	Japan	9,481	0.8	27.1	16.0	7.1
Nortel	Canada	8,223	4.6	92.7	87.0	6.2
Fujitsu	Japan	4,774	3.1	15.5	30.0	3.6
Bosch	Germany	3,413	-29.2	16.1	54.0	2.6
Nokia	Finland	2,531	21.4	43.8	85.0	1.9
Total		100,969	12.3	34.8	40.0	75.7
Others		32,571				24.3
Global total		133,540				100.0

Source: ITU/Company Reports/MarketLine International Database

Top 10 countries

By telecommunication equipment manufacturing (1994)

Country	US$m	% share
US	40,365	30.2
France	22,194	16.6
Germany	18,733	14.0
Japan	14,535	10.9
Canada	10,054	7.5
Sweden	9,947	7.4
UK	3,601	2.7
Finland	2,987	2.2
Netherlands	2,570	1.9
Switzerland	1,782	1.3
Total	126,768	94.9
Global total	133,540	100.0

Source: MarketLine Telecommunications Database

Top 10 countries

By penetration of main telephone lines (1994)

Country	Main Line pntn*
Sweden	68.31
Denmark	60.37
Switzerland	59.74
US	59.48
Canada	57.54
Norway	55.40
France	54.74
Finland	54.70
Hong Kong	53.99
Netherlands	50.87

*Number of main telephone lines per 100 inhabitants
Source: ITU

Top 10 countries

By number of main telephone lines (1994)

Country	Lines (m)	Pntn*
US	154.9530	59.48
Japan	59.6000	47.76
Germany	39.2000	48.31
France	31.6000	54.74
UK	28.3666	48.87
China	27.2300	2.29
Italy	24.5420	42.94
Russia	24.0973	16.24
South Korea	17.6466	39.70
Canada	16.7564	57.54

*Number of main telephone lines per 100 inhabitants
Source: Mobile Communications

Sources:
Financial Times Research
Salomon Brothers
MarketLine International Database
OECD
ITU/BDT/INFS
Telecom Markets & Mobile Communications (FT Newsletters)
Tel - +44 (0)171 454 1185
Fax - +44 (0)171 490 1686
Information on fibreoptic cables supplied by:
KMI Corp
Tel - +1 401 849 6771
Fax - +1 401 847 5866
Cartography by:
Cosmographics
Tel - +44 (0)1923 210 909

Top 10 countries

By minutes of outgoing international traffic (1992)

USA	10,210	24.8	24.8
Germany	4,087	9.9	34.8
UK	2,849	6.9	41.7
France	2,320	5.6	47.3
Switzerland	1,525	3.7	51.0
Italy	1,473	3.6	54.6
Japan	1,284	3.1	57.7
Hong Kong	1,137	2.8	60.5
Netherlands	1,134	2.8	63.2
Belgium	911	2.2	65.5
Total	33,018	80.3	80.3

Source: ITU/BDT Telecommunications Indicator Database

Top 10 international routes

Among developing countries (1992)

7	Hong Kong	China	534
8	China	Hong Kong	412
73	Singapore	Malaysia	110
74	Saudi Arabia	Egypt	106
89	Malaysia	Singapore	92
112	Hong Kong	Taiwan	78
125	Taiwan	Hong Kong	64
159	UAE	India	48
163	China	Taiwan	47
176	Saudi Arabia	Pakistan	43

*Millions of minutes of telecommunications traffic
Source: ITU

Top 20 international routes

(1993)

US/Canada	2493.1/1602.3	4,095.4
US/Mexico	1398.8/456.1	1,854.9
US/UK	799.8/499.9	1,299.7
Hong Kong/China	688.4/535.0	1,223.4
US/Germany	572.4/263.2	835.6
Switzerland/Germany	363.0/340.0	703.0
Germany/Austria	368.0/322.2	690.2
US/Japan	397.2/287.8	685.0
Germany/France	348.0/285.0	633.0
Germany/UK	343.0/281.0	624.0
Germany/Netherlands	290.0/284.8	574.8
UK/France	287.0/285.0	572.0
Germany/Italy	320.0/239.8	559.8
UK/Ireland	266.0/207.1	473.1
Belgium/France	234.9/201.0	435.9
Germany/Turkey	330.0/97.6	427.6
US/France	263.6/161.7	425.3
Italy/France	212.2/212.0	424.2
Switzerland/France	271.0/143.0	414.0
Netherlands/Belgium	206.4/202.2	408.6

The country which generates the most traffic on each route is listed first. US figures include all traffic carried by US-based callback services, even if the original caller is based elsewhere.

*Millions of minutes of telecommunications traffic

Source: ITU

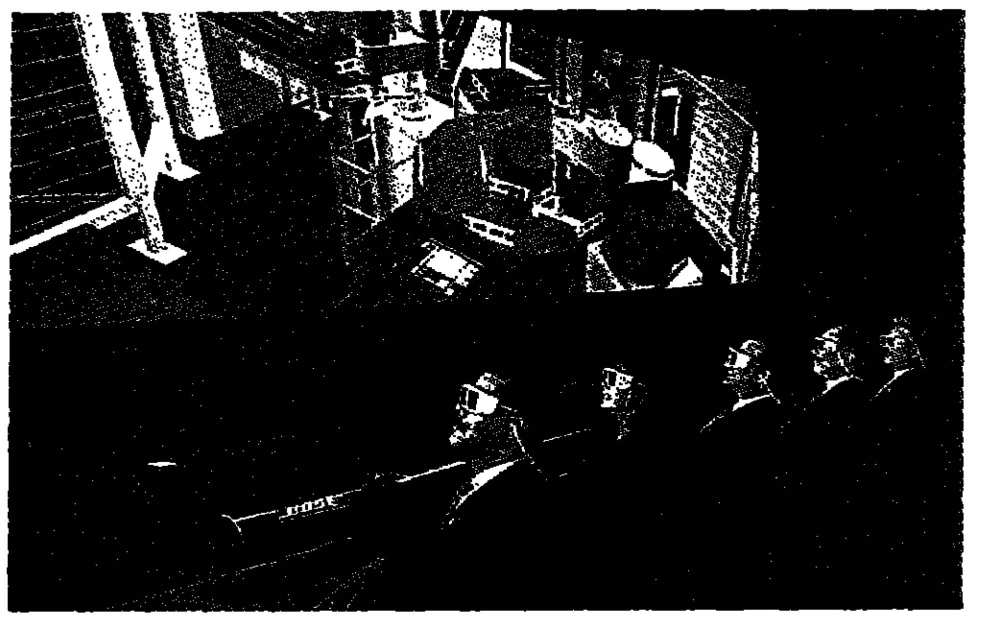
Top 10 telecommunications operators

By domestic service revenue (1994)

Operator	Country	Telecom revenue Total US$m	% change 1993-4	Main lines Total (millions)	Change 1993-94 (%)
NTT	Japan	60,134.7*	2.8	58.46	2.0
AT&T	US	43,425.0	8.9	-	-
Deutsche Telekom	Germany	37,712.6	3.7	39.20	6.2
France Télécom	France	23,288.4	1.8	31.60	2.8
BT	UK	21,282.6	1.6	27.07	1.6
Telecom Italia	Italy	18,047.2	-	24.54	-
GTE	US	17,363.0	0.6	17.44	2.2
BellSouth	US	16,844.5	6.1	20.22	4.6
Bell Atlantic	US	13,791.4	10.0	19.20	3.0
MCI	US	13,338.0	11.9	-	-

Operator revenue change based on local currency; total based on $US
*Revenue figure is for 1993

Source: ITU/BDT/INFS



☐ Flying the network: above, left – a telecom engineer uses a desktop virtual reality system to interact with three dimension models of complex BT networks. In the future, managers will be able to 'fly' through networks, taking a global view or pinpointing problem areas.
☐ Above: TeleVirtual has pioneered the live computer presentation on television of 'VACtor' – meaning virtual actor. This is a real-time performance animation system which allows the voice and facial expressions of an actor to control the speech and movements of computer-generated characters.
☐ Lower left: viewers in the EDS Detroit virtual reality centre watch demonstrations on a 24ft wide by 6ft high screen.

■ **The virtual campus:** A breakthrough in Spain **By Rebecca Warden** in Catalonia

Students in cyberspace

They do research in a virtual library and fraternise in a virtual cafeteria: universities may never be the same

The world's first virtual campus has flickered into life in Catalonia, north-eastern Spain.

The Open University of Catalonia (OUC) combines multimedia applications, electronic mail, videos and tapes with the more traditional pen and paper, to allow people to take a distance degree.

Using new technologies to improve the quality of distance education is nothing new. Canada's Telé-Université in Quebec and *Mexico's Item Seis*, for example, are already experimenting with sending students *pre-recorded classes via satellite*. The Catalan project, however, is the first teaching institution to be entirely built around communications technology.

The first intake of 200 students are taking degrees in either business studies or educational psychology. In the years to come, law, engineering, English, Catalan and statistics will be added to the prospectus; and by the year 2000, *student numbers will have* reached 11,000.

This new brand of cyber student *will use* a personal computer, a modem and the telephone line as essential study tools. Although basic course materials still arrive on paper in the post, the students, scattered throughout the region, will hand in essays, receive corrections and communicate with lecturers and other students via electronic mail.

Students also have access to the Internet, a virtual library and a virtual cafeteria to lessen feelings of isolation. Study meetings held twice a semester will provide face-to-face contact, but otherwise students, most of whom hold down full-time jobs, will study at home, setting their own timetables.

Every big Catalan city will *soon have an OUC resource* centre, linked up by fibre optic cable. Here students may gather to take part in live videoconferences and debates. At the heart of the web, in a *well-heeled district of* Barcelona, the university headquarters oversee the day-to-day running of this futuristic institution.

The OUC has been set up in a record 12 months on the initiative of the Catalan regional government. Between working *frantically to* meet their deadlines, OUC staff readily admit their project is highly experimental.

"We are an institution that re-invents itself on a daily basis," says Francesc Noguera, head of information systems.

As a new way of delivering education calls for new vehicles, conventional study methods will be supplemented by *multimedia* modules. Leading academics have been commissioned to provide the academic content and the OUC team is converting this raw material into interactive multimedia packages. For Carles Gay, head of multimedia publishing, the newness of what they are doing means problems are more often conceptual than technical – "how do we go about producing something which is a multimedia material rather than a book, but which *still has educational value?"* he asks.

Multimedia will also fulfil less academic functions, such as keeping students in touch with university life. A calendar interface containing information on upcoming lectures, videoconferences and cultural and sporting events is the first programme off the production line. *Multimedia interfaces act* as the students' main window into the university, and are *seen as key elements.*

Given that the student profile is diverse, the OUC team is at pains to ensure interfaces are as user-friendly as possible. Rich Lang, interface designer at the OUC says: "Students don't care that this building is full of networks, circuits and expensive machinery. They want to know what happens when they pop on the computer."

Pilot group

While most students will communicate via the public telephone system, a pilot group of 15 will start off this year using ISDN, a more advanced technology which will allow them to transmit data and images at much higher speeds. As ISDN exchanges and accessories become more widely available in Spain, more students are expected to switch to ISDN.

Telefónica, Spain's main telecoms operator, has been closely involved. It has agreed to charge students the local rate for Open University calls so that people distant from the centre will not have to pay more. This is the first time Telefonica has moved away from the principle of charging calls according to distance, a measure of the importance it attaches to this project.

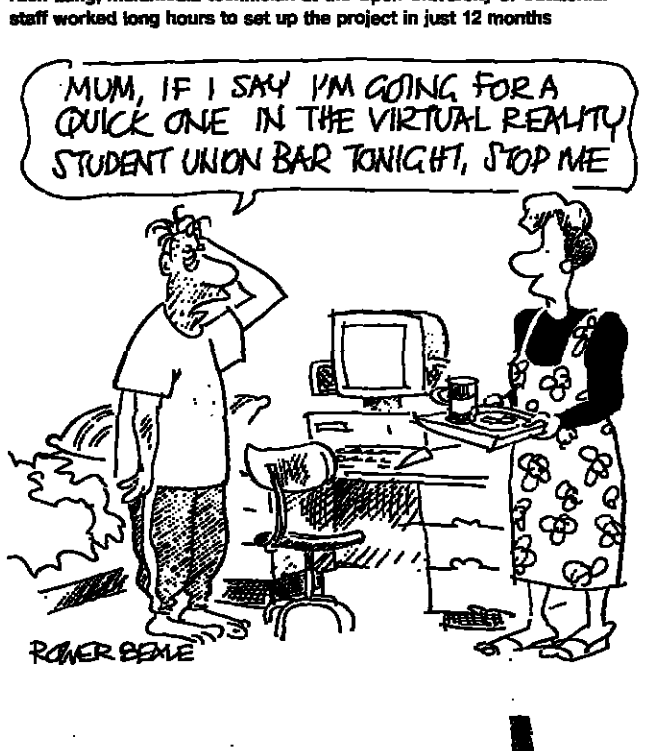
For Telefonica, the UOC is a chance to put its ISDN technology into practice on a large scale – allowing it to simultaneously iron-out technical problems and reach an attractive user-group.

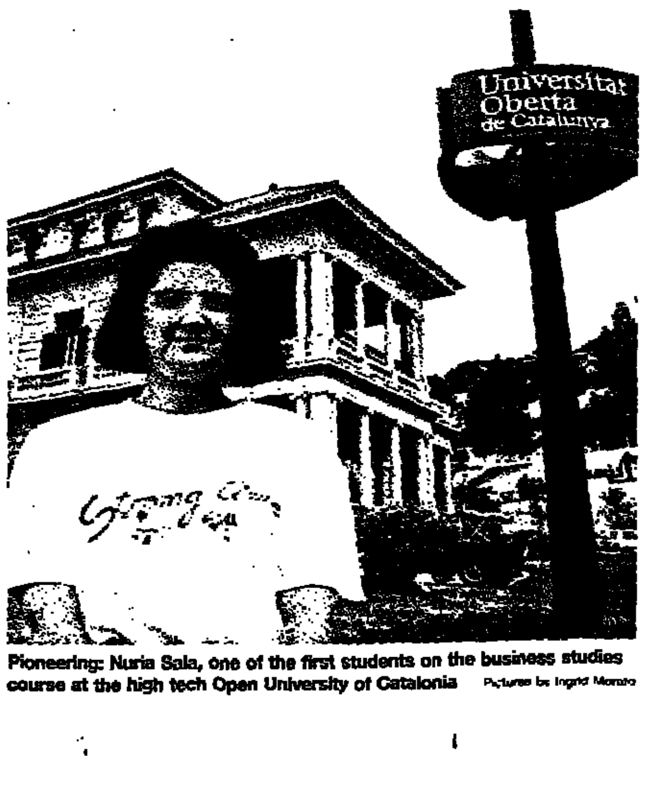
"With several thousand students and professors using this technology, within a few years people will be used to working in this environment," says Josep Maria Canals, director of Telefonica Barcelona.

The people at the OUC are convinced their idea is a blueprint for the future. As training needs diversify and telecommunications help to break down the barriers of distance, the role of new technologies in education looks set to grow.

"What now seems the project of a single university could become a valid alternative for all universities," says UOC vice-rector Francesc Pedro.

Rich Lang, multimedia technician at the Open University of Catalonia: staff worked long hours to set up the project in just 12 months



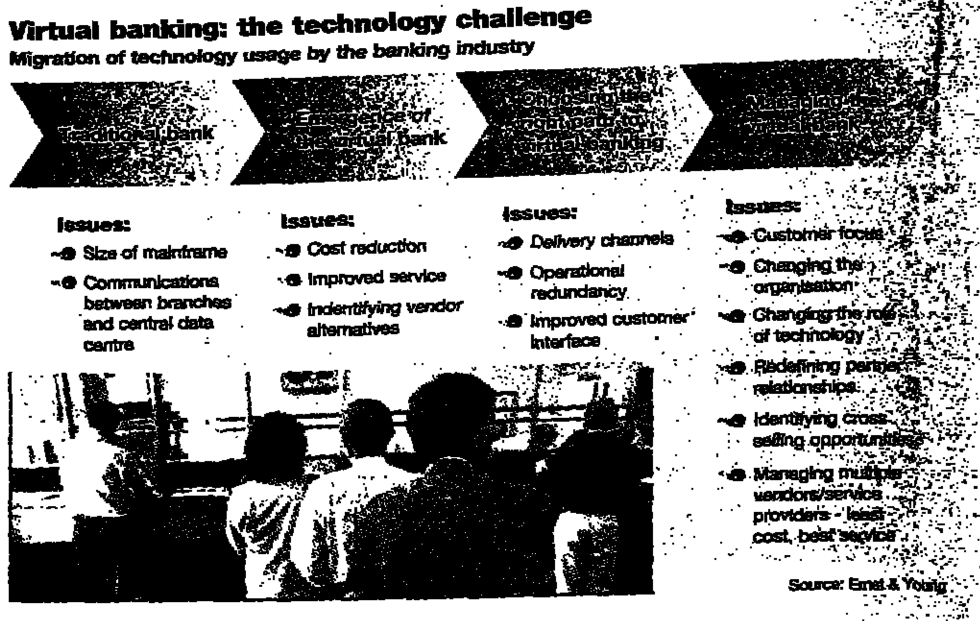


Pioneering: Nuria Sala, one of the first students on the business studies course at the high tech Open University of Catalonia Pictures by Ingrid Moreno

■ **Financial applications:** Prospects for *on-line* banking at home – report by **Michael Dempsey**

Virtual banking on trial

Hardware and costing issues could scupper the best-laid plans for virtual banking



"There are so many people with a peripheral interest in this game – but it's very difficult to see where it's going." This is the view of Mike *McManus*, who is an admirably forthright banker. His uncertainty relates to the emerging *world of retail banking*, relocated to the home.

As managing director for *current and savings accounts* at Barclays Bank, Mr McManus has overseen the launch of a *pilot home banking service*. This facility allows account information to be accessed and transactions to be processed on the customer's personal computer (PC).

The *PC banking* service began recruiting customers in July. Its remit was not, however, to suddenly revolutionise Barclays' retail offering and abolish the branch network. Mr McManus and his colleagues know there is a big gap between the theory of virtual banking and the arrival of an economic solution that matches consumer taste.

Barclays is using this service as a trial: it needs 2,000 *subscribers to* assess whether virtual banking is a practical option. The only qualification *for getting on-line to* Barclays is possession of a Windows-compatible PC and a modem, and *Mr McManus claims* that more than 2,000 people have signed up already.

Membership of this prototype system is free, but fixing a charge structure is the big dilemma in the long term for retail banks moving into virtual service. What will customers pay for the additional convenience, and will this rate fall *below the threshold of* economic viability for the service provider?

For Barclays, the customer charges are only part of the equation: one of the chief attractions is that PC banking does not monopolise computer resources. Remote subscribers are only on-line to the bank's computer system when they need to be. Setting up six new standing orders, for example, is an off-line activity, and with *home banking*, Barclays' systems are only engaged for the time it takes for the customer to transmit *the instructions* – "it's an economy for both parties," says Mr McManus.

"The customers are not on-line, and hence potentially paying for access, when they are merely looking at account information and analysing it. We are only on-line when we dump the data down to them."

Bank payrolls are clearly also part of the consideration. Any system that frees employees from lengthy telephone engagements has implications for staff reductions.

However, the first indications of the Barclays experiment are that PC banking services appeal to a limited customer base. Dishing out personal computer hardware to customers *might prove popular* among recipients, but it is not practicable. Barclays is therefore *restricted to doing virtual* business with those people who already possess the right systems at home.

In terms of account value, these are not the top customers. Although technically more literate, they tend to be younger - and younger customers tend to have less money.

Barclays already has a distance-banking service, with telephone banking facilities to rival Midland Bank's *successful First Direct operation.*

The concept of telephone banking has proved successful: *Kelley Knutson*, a *senior* vice president with Visa International, has publicly praised First Direct for what he called its bold initiative.

Mr Knutson is as keen on the concept of virtual banking, and says Visa is prepared to spend tens of millions of dollars to get a viable system off the ground. The choice of an *appropriate service* and delivery mechanism, however, is a stumbling block, he says.

Visa Interactive was *formed* at the end of 1994, and aims to have a virtual service experiment up and running in every Visa region worldwide by the end of this year – "all our interactive work is driven by the type of device the customers want to use. The first and most logical delivery mechanism is basic telephone banking, with the customer service representative at the end of the line," says Mr Knutson.

"Based on touch-tone telephones, we are launching this offering in the US, Latin America, and Canada; and we're investigating two pilots in Asia Pacific."

He estimates that by mid-1996, some 50 US financial institutions will be co-operating with Visa to manage card accounts over the phone. This will represent 100,000 to 400,000 *customers to start with*, while

Kelley Knutson of Visa: keen on the concept of virtual banking

Visa hopes for 1.4m US users by 1999. Start-up costs for such a service will be around $5m, says Mr Knutson. The computer hardware and associated telecommunication networks *are already in place in banks*, he adds.

A more radical Visa initiative involves Screen Phones. These have emerged from co-operation with Dutch electronics giant Philips, and will allow customers to conduct transactions using a screen display that illustrates the data under discussion. The additional cost means these devices *will be issued to a minority of* US customers.

Visa is investigating a home banking *service similar to the* Barclays PC banking experiment.

"We do have definite market segments in *mind*," says Mr Knutson. But the core question remains the same: how much will these groups pay for a banking service that adds to their normal domestic telecoms bill?

Mr Knutson predicts banks will fight shy of direct charges. Local and national toll-free *numbers could be provided, he* says, which would entail organisations like Visa absorbing the telecoms expenses.

There are, however, some items on the credit side. Visa stands to profit from home banking by marketing its own software solutions, for example, which could bring it into direct competition with software specialists like Microsoft and Intuit.

The balance sheet is also *helped by the fact that* Visa has a strong base in terms of existing computer network and telecoms links into banks on a global basis.

Moreover, credit cards are huge business, with 8bn Visa transactions alone every year. The annual cardholder spend attached to the 403m Visa cards in circulation is $630bn. Mr Knutson says this impressive activity should move with the pace of retail technology.

Visa is some way off having an answer to every economic question, but Mr Knutson has reached a useful corporate definition of a virtual service. "Anytime, anyway, anywhere is how we look at it. The customer will choose different access devices seven days a week," he concludes.

■ **Virtual shopping:** Downtown on the Internet is a little dull, reports **Monica Horten**

Early days for retailers

With too much browsing, not enough buying, poor security and technical hitches, virtual shopping on the Internet is still a non-event

If you walk into *Toys R Us*, you expect to see toys. An obvious statement, surely. Yet if you were one of the many visitors to the store's Internet outlet in recent months, you would have been disappointed – only a small selection of computer games and CD-Roms, but no cuddly bears and train sets. And, as likely as not, you left without buying.

Not to pick unfairly on one store, one can find many other similar examples on an Internet shopping expedition. There are some 30 virtual shopping malls listed on the Internet, each of which has a number of stores attached to it. I looked at several at random. I found that with a couple of notable exceptions, they had a meagre selection of goods in their virtual displays.

Take Hammacher Schlemmer, a well-established US-retailer specialising in unusual gift items. Its Internet store contains a mere 18 items. But somewhere in the on-line small print, we learn that there are "hundreds" of items in its stores and in its conventional mail-order catalogue.

The reason is that retailers worldwide are still learning when it comes to online shopping. They are struggling to work out what their customers want from an on-line service, as well as how they can best deliver it, given the constraints of today's telephone technology.

The Hammacher Schlemmer virtual store is located on the Internet Shopping Network: a third-party company based in Menlo Park, California and a subsidiary of the large US retail group Home Shopping Network.

The Toys R Us on-line store is located on BarclaySquare, co-ordinated by Barclays bank *in the UK. BarclaySquare was* set up as a way for the bank and UK retailers to begin to *get to grips with on-line* opportunities. According to Roger Alexander, managing director of Barclays' emerging markets unit, more than 160,000 people have browsed its stores, although actual sales numbers are closely guarded.

Simon Hochhauser, chairman of start-up on-line services company Video Networks, is more outspoken: "If you look at examples of Internet shopping, it is a common complaint that people browse but they don't actually buy anything."

The first issue faced by retailers is a technical one. Many stores illustrate their on-line offerings creatively – usually their logo, a colour picture of the product and other graphic images to jazz-up the virtual store.

For the customer, downloading all that over an ordinary telephone line on to an average PC takes time: an entire store catalogue would take days, if not months. So the retailers have been selective in the number of goods offered, and in doing so they have created an effect that is rather like walking into a near-empty store in the former Eastern bloc.

One view emerging in the industry is that it is better to offer a larger range at the expense of on-line visuals. This may work well where the product is already well-known, and customers just want a simple way to order. The main attraction of the Internet Shopping Network is a catalogue of 25,000 computer products.

On BarclaySquare, Blackwell's bookstore has put its entire catalogue of some 130,000 books on offer. However, it has compromised on graphics and on information. *One is simply searching a* catalogue, with no background available on any of the titles. *The result is* visually boring, but it has proved a little more successful than the selective approach.

Others take the view that the impersonal nature of online shopping may be the reason for the small numbers of purchases. Hochhauser points to the lack of "selling pressure". When a customer walks into a real-life store, there are a number of tactics used by the store to try to make that customer buy.

> 'It's like a near empty store in the former Eastern bloc'

When one goes shopping on-line, there is no personal contact, and *no means for the* retailer to exert any pressure on the customer to buy.

Video Networks *is working* on ways to introduce sales pressure into an on-line *shopping environment. Possibilities* include the back-up of real sales people who could talk to the *customer over the* same phone link as the on-line store. The company will put its ideas into *a commercial* environment with an on-line shopping service in Hull, set up jointly with the local phone company, Kingston Communications, and retail groups.

But even when purchases do increase in volume, the retailers' *conundrum* will not end. Security is a problem they are only just beginning to address, as is distribution to a potentially global market.

The Internet today is not sufficiently secure for the handling of financial transactions. And, in the on-line environment, there is no guarantee that either the vendor or the buyer is genuine.

The on-line retailers are clear about the physical security when they ask for payment – a message appears on screen, informing the customer the transaction may not be secure and that they may wish to use an alternative, such as conventional telephone.

An assurance that the other party is *bona fide* may, *according to Mr Alexander*, be provided in future by a trusted third party. The third party *organisation would control* both sides of the transaction, and be responsible for all the necessary credit checks.

The Internet Shopping Network is an early example. Customers must sign up as "members" and give a credit card number before being allowed to buy from any of its stores. When they make their purchase, they are warned that memberships will be checked and those which give a "bad address" will be cancelled. Barclays is also positioning itself for this third-party role in the longer term.

Serving a global customer base will pose an even greater challenge. According to Mr Alexander, the telecom facilities are in place to offer the retailer a potential worldwide market, but commercial reality means it will not happen so fast – "BarclaySquare is *open to people worldwide*. They have to take a decision if they wish to make their goods *available in other countries*. And in doing so, they have to consider the tax implications as well as distribution."

هكذا من الأصل

Robocob – one of today's big feature films which may not be available via video-on-demand technolgy in Europe until the next century, due to repeated VOD technical delays Orion Pictures, New York

■ **Video-on-demand:** More than 50 research projects are under way around the world, writes **Joia Shillingford**

Key technical trials face delays

Apart from technology problems, the big commercial challenge is how to make video on demand pay

Video-on-demand (VOD) will *not* be coming soon to a television near you. In fact, commercial implementation of VOD – which allows viewers to select the films they want – is unlikely to happen in Europe till the next century. There are a number of reasons why:

First, nearly all the video-on-demand trials have been delayed. Bryan Van Dussen, a senior analyst at the Yankee Group Europe, says: "British Telecom's commercial trial has been delayed by a few months and Deutsche Telekom's by six to twelve months.

"There have also been delays in the US – Time Warner's trial in Orlando is almost a year late. In addition, some US *trials have been scrapped com*pletely completely, and a number of deals have collapsed."

Where the trials *are* going ahead, many are doing so with fewer customers than planned, according to John Matthews, co-author of an Ovum report on interactive television.

Delays have been caused by a mixture of technical problems and commercial issues. Matthews says the Time Warner trial, one of the most ambitious, "has undoubtedly had technical problems. And all suppliers have had prob*lems coming up with a good* user interface."

Of the commercial issues, the most challenging is how to make VOD pay. The Stanford Research Institute believes that video-on-demand will attract users to interactive networks but not generate enough revenue to cover suppliers costs.

The most likely scenario is that suppliers will use VOD as the bait to lure consumers, while making their money from added services such as interactive shopping and advertising, and home banking.

"Suppliers will gain revenue not from a few movies a week, but from businesses advertising their services on interactive networks," says Van Dussen.

Twelve to 16 times more is spent on advertising in Europe than on subscriptions to cable TV, according to his report on Cable TV in Europe.

Providing services in addition to VOD adds to the commercial complexity of VOD, though it does not materially affect the technical complexity. Paul Sharma, a spokesman for BT, says one reason for the delay in BT's video-on-demand trial is that it rejigged the scope of it. It was going to be a VOD trial, but is now an interactive TV trial, *including* VOD.

The high cost of providing services is also likely to delay full introduction of VOD. BT says its commercial trial in the Ipswich/Colchester area will cost tens of millions of pounds. Matthews points out that the BT board is unlikely to agree to a nationwide roll-out without clear evidence that it pays.

Most of the trials which are *underway include services in* addition to VOD, with home

> Services along with video on demand will include home shopping and video games

shopping and games proving the most common. However, *they may not give a true pic*ture of the level of take up because trialists get some things free – for example, subscription fees – and because content is sometimes restricted. On some trials, says Matthews, viewers can only select old films, not recent releases. Whatever the limitations, Ovum says there are more than 50 trials taking place in different parts of the world in 1995; in the UK:

■ BT-owned Westminster Cable will run a beta trial of video-on-demand from November 1995 to March 1996 for 100 cable customers. It will then be opened to 1,000 customers and gradually expanded further. These customers will be able to choose from a constantly-updated video library of around 200 titles.

■ British Telecom has completed its technical trial, and had put a few BT staff on its commercial trial by late *August. Commercial users will* be added in September. Eleven services including VOD will be offered.

■ Cambridge Cable has been running a small trial in conjunction with Online Media, a company owned by Acorn Computer, in which Olivetti is involved. The trial has included video-on-demand and a lot of educational material and games – 100 users are soon to be involved in the project.

Ovum says North America is closest at present to a commercial roll-out, ahead of Europe *and Far East countries. How*ever, Hong Kong Telecom, which did not begin its trials till the second half of 1995, seems likely to be one of the first offering interactive TV services in mid-1996.

A variety of cabling is being used for the trials including coax cable (favoured by cable TV networks), standard copper phone lines (favoured by phone companies) and fibre optic lines (favoured by anyone who can afford them because they have greater capacity). For example, British Telecom's commercial trial will use copper to the majority of homes and fibre to a fifth.

'Judge Dredd' with Sylvester Stallone: big feature films like this may eventually attract viewers of video-on-demand to interactive shopping services and home banking, suggest US researchers Cinergie Pictures

In addition to telecoms suppliers and cable companies, a number of other suppliers are keen to seize a share of the VOD. These include hardware companies which provide the powerful server systems which hold the databases of different films, database software suppli*ers, and companies providing* the hardware and software for the set-top boxes customers will use to make their selections.

It is not yet clear who will emerge as market leaders. Ovum says those who are involved in trials in more than one continent include Digital Equipment, Oracle, Hewlett-Packard, Silicon Graphics, IBM and Philips.

Equally unclear is what interactive services users will be prepared to buy. But Van Dussen says: "If anything gives an indication of how interac*tive services will develop, it is* the Internet [the global electronic mail and information network]. Some of the most successful interactive television services will develop directly from the Internet."

In the meantime, a number of cable TV companies are developing services that look and 'feel' interactive but are less complex to deliver.

In Canada, Videotron used four channels to cover a football match. Channel B showed the same match as Channel A but delayed by seven seconds. This enabled users to switch between the two and get an instant replay.

> Experimental projects in the US are the most advanced so far

Channel C showed the match from a different camera angle, making users feel as if they were in control of the cameras. And Channel D gave match statistics, such as who committed the last foul.

'Near video-on-demand,' another service many cable companies are thinking of offering, also gives the user more control. Popular films are shown on a number of chan*nels, but with staggered starts* – so users never have to wait more than 15-20 minutes for their chosen movie.

The writer, Joia Shillingford is Associate Editor of the Financial Times newsletter, 'Business Computing Brief'.

Internet access costs may rise

Continued from page 22:

companies that already own a *domain name must* pay $50 a year.

It is not only government subsidies, however, that have kept Internet costs down. Until now, Internet access costs for users in the US and many other countries have been based on a flat rate fee designed to cover any long-distance communications costs incurred by the access provider. Thus, most Internet users pay the same amount whether they are sending messages across town or to the other side of the world. Internet service providers pass traffic to each other under a "zero settlements" policy. This means that fees are not exchanged between carriers based on the source, destina*tion or volume of network traf*fic handed from one carrier to the next.

The Internet has thus become an anomaly in the telecommunications world because cost is not related to distance. While there is likely be strong user resistance to any change in flat-rate pricing for the Internet, some experts predict that prices will nonetheless increase.

Already some Internet providers have mooted the idea of establishing a scale of fees for different types of applications. Thus, while simple electronic mail messaging might remain inexpensive, users that send or receive multimedia "multicast" signals which consume high bandwidth capacity would pay a *premium.*

More likely, suggest industry analysts, is the emergence of varying levels of Internet service at differing prices. Businesses, for example, may choose one of the "value added" Internet services such as IBM's Global Network or AT&T's recently introduced WorldNet "managed Internet service".

While businesses may be prepared to pay more for reliable Internet access services, the consumer segment of the market is more price sensitive.

New options for Net surfers: see page 32, in Part Two

■ **Japan:** Telecom users are worried by high costs, reports **Michiyo Nakamoto** in Tokyo

Calls for greater diversity

Business leaders are concerned that Japan is falling behind in the race towards an advanced telecoms age

For several years the Japanese public has been waiting expectantly for a small revolution in the domestic telecommunications industry.

Gone were the days, people were told, when the good old telephone in the home or office was the only really expedient means to communicate over distances. New technology, new services and new rate structures that would emerge with deregulation would spur entirely new uses for the telephone line and dramatically change the way society goes about its business.

Ten years after NTT, the former public utility, was privatised in 1985, Japan's telecoms environment has indeed undergone significant change.

Instead of the two carriers – NTT and KDD – which respectively enjoyed a monopoly of the domestic and international call markets, there are 111 "Type One" telecoms carriers operating their own networks, according to the Ministry of Posts and Telecommunications.

The number of "Type Two" carriers, which provide communications services but do not own their own network, has grown from 90 some 10 years ago to more than 2,100, the MPT notes in a recent report. The entry of new carriers over the years has spurred competition which, in turn, has helped to lower prices and introduce new services.

For example, the rate for long-distance calls between Japan's two largest cities, Tokyo and Osaka, has dropped steadily since liberalisation and even in recent years NTT has cut its long-distance rate for a three-minute call from Y400 in 1988 to Y180 today.

The cost of a leased circuit has fallen by nearly a third in the six years since the new carriers began leased circuit operations, notes the MPT.

New telecoms businesses are also thriving as a result of increased competition and deregulation. In mobile phones, for example, the liberalisation of handset ownership last April has triggered a surge in supplies of, and demand for, cellular phones.

Mr Makio Inui, industry analyst at Kleinwort Benson, estimates that the number of handset suppliers has more than doubled since handset liberalisation.

Cellular phone penetration – which was at 1.7 per cent at the end of March 1994, rose to 3.5 per cent in a year, says Goldman Sachs, the US Securities Company, in a recent report.

Meanwhile, the personal handy-phone system, which uses small, digital phones that cost significantly less than conventional cellular phones, began operating in July this year and has taken off to a firm start.

In certain respects, Japan's telecoms market has undergone tremendous change. Nevertheless, there is a widespread feeling that further, more fundamental, change is crucial to the healthy development of the telecoms industry in the next century.

Industry groups, consumers and bureaucrats in the telecoms ministry share a common recognition that much needs to be done to ensure that Japanese users will be able to enjoy the benefits of rapid technological changes taking place in the telecoms industry.

The growing consensus among business and government leaders who are concerned that Japan is falling behind in the race towards an advanced telecommunications age – and users who are unhappy about the high costs and the lack of diversity of services – is that the telecoms market is suffering from a lack of competition.

"Greater competition in the form of diverse services is crucial for the further, continuous development of the telecommunications market," the MPT notes in its 1995 annual report.

This is not to say that competition does not exist. NTT, the former public utility, and the new long-distance carriers compete vigorously in the long-distance market. With the liberalisation of the cellular phone market, competition in this sector has also been intense.

However, the sheer size of NTT, which is the largest telecoms operator in the world in terms of market capitalisation, and its virtual monopoly over the local network, are regarded as important impediments to fostering effective competition in the domestic telecoms market.

The point was underlined recently when the new carriers complained to the telecoms ministry that NTT was hindering their efforts to introduce new services by refusing to agree terms for interconnection with NTT's local network.

In a highly publicised case, Japan Telecom charged that

> Japan's NTT is now the largest telecoms operator in the world, in terms of market capitalisation

for more than two years NTT had prevented it from offering frame relay services by refusing to agree to conditions for interconnection.

The NTT camp, for its part, charges that the new carriers have not been enthusiastic about competing with NTT on services. The basic rates charged by the three new carriers and the new types of services offered are more or less identical with each other, notes Mr Masao Homma, president of Infocom Research, a marketing consultancy majority-owned by NTT. The new carriers have been neither creative in their service offerings nor aggressive in promoting those services, he says.

With the Japanese government scheduled to make a decision on NTT's fate by the end of the current fiscal year in March, the consensus among industry analysts is that NTT is most likely to be dismembered into a long-distance carrier and several regional carriers.

The MPT has certainly been in favour of breaking up NTT, which it believes is the best way to ensure fair and effective competition in the industry.

Meanwhile, strong opposition to a break-up is coming, mainly from NTT itself – with other interested parties, such as the Ministry of Finance which still owns 65.5 per cent of NTT shares, and the Keidanren, the powerful business organisation, reserving judgment for the time being.

Although the tide appears to be turning in favour of a break-up, the crucial question the government faces is whether a break-up in itself can ensure adequate competition in both regional and long-distance markets.

The argument is that even if NTT is broken up into several regional operators and a long-distance operator, the regional operators will still have an effective monopoly of their territories.

Despite a number of measures the MPT has already adopted to ease market entry, new competition has been painfully slow in emerging. For example, although there are no formal rules preventing CATV companies from providing telephone services, not a single company has yet applied to do so, the MPT says.

In this respect, trading companies which have been investing heavily in the information communications industry could play a key role in promoting ties between various operators, which in turn could form the basis for effective competition against NTT, suggests Mr Akiyoshi Hayakawa, industry analyst at Nikko Research Center.

Mr Akiyoshi believes that alliances between trading companies, CATV companies and foreign CATV companies or between long-distance companies and CATV companies could redraw the industry map within the next three to five years.

Whatever the outcome of the government's review, the hope is that it will represent the starting line, rather than the goal, in the ministry's mission to foster the fair and effective competition it professes so vigorously to seek.

■ **View from the top:** By **Masashi Kojima, President, Nippon Telegraph and Telephone**

The age of convergence

'We are entering an age in which the strongest individual carriers and consortia will compete and collaborate with each other,'

There has been dramatic progress in the world economy this century led by the automobile industry and supported by developments in telecommunications, electric power and transport.

People now have the freedom to travel and make more effective use of their time. Boundaries to economic and social activity are being removed.

Advances in communications technolgy will continue to have great impact. NTT has boosted the transmission performance of its optical technologies one hundred fold over the past 15 years. The time is approaching when multiple, low orbit satellites will enable wireless communication across the entire face of the earth.

In addition, network computing has become a decisive element in the creation of the industrial infrastructure of the 21st century.

When individual computers are harnessed together in networks, the impact will be felt not only in industry but throughout society. There will be cultural changes. The outstanding example of this is the dramatic worldwide expansion of the Internet.

What is special about computer networking is that digital technologies have made the creation, transmission and handling of information simple and cheap so that computing can be dispersed through society. Indeed, from a sociological perspective, the value of computer networks is their capacity to distribute information and knowledge, a second revolution on the scale of the introduction of moveable type printing.

Whereas information was traditionally moved one way only, with the general public confined to a passive role as receivers, citizens are now gaining the tools to create an open world.

On the economic side, such networks are destroying the boundaries between traditionally unconnected areas of industry. They are generating international competition and collaboration in the flow of goods, services and finance. We can already use a computer on our desk or in our lap to access information worldwide,

'We recognise the benefits of competition,' says Masashi Kojima

purchase goods, or make a presentation.

Telecommunications markets in nations worldwide are also undergoing upheavals. The most developed economies operated government-run monopolies until the mid-1980s. They then embarked on a process of liberalisation that saw the introduction of competition into the market.

This happened most readily in long distance services while at the time, regional communications markets often continued to retain effectively near-monopoly status.

US example

The prime example of the process is what happened in the United States, where AT&T was split up and a similar approach has been employed in Japan. Now, technology advances have begun to force recognition of the latent competitive potential of regional telecommunications markets.

The US is revising its communication laws to revise the Modified Final Judgement that formed the basis of the AT&T breakup, thereby enabling long-distance and regional carriers to enter each others' market while opening regional markets to competition.

In the UK, too, competition is now allowed throughout the industry, with cable TV operators able to offer regional telephone services. The other advanced economies are treading similar paths. Two points on which particular attention should focus are the use of open networks by which new market entrants can use the networks of the existing dominant carrier as a means to promote full competition, and the elimination of distinctions between different kinds of service that follows the removal of borders in the communications market.

These changes have prompted the governments of most of the world's leading economies to adopt an approach that recognises the positive impact of the dominant national carrier, as an industrial infrastructure, on a county's industrial strength and aims to promote competition without dividing the carrier and dissipating its benefits to the overall economy.

Moreover, we see two major factors in future developments. The first is that the greater cross-border distribution of activities by corporations means that they will require global networks. Rivalry between carriers from the advanced economies keen to participate in the telecoms infrastructure creation programmes of developing nations shows that global competition is becoming a reality.

The other factor of importance is the convergence of industries, as technological innovation brings together a world in which movers of goods, information and money can carry on businesses on computer networks. This means we are entering an age in which the strongest individual carriers and consortia will compete and collaborate in a borderless global market.

In building the Global Information Infrastructure (GII), it is important not to forget that information communication is an infrastructure of the industries of the future. There is a real danger that differing speeds of development could lead to a worsening of North-South economic and environmental problems. To address this issue, distributed and independent networks are the key. From the perspective of users, the network should be seamless; from the perspective of those building it, it should be open.

We recognize the benefits of competition in providing customers with the best quality services and we have been aggressively pro-active in opening our networks. In addition, the revision of various regulations to permit competition in regional markets will further invigorate the Japanese communications market.

In June 1995, NTT announced the concept of a new network for the coming multimedia age. We are now moving ahead with construction of an Open Computer Network (OCN), a type that has never been employed by a telecommunications carrier. We intend to work with other companies through joint multimedia utilisation tests based on a high-speed, broadband, backbone network and the construction of an Electronic Commerce Network.

The construction of these networks and application platforms, and the open connection of the OCN to such networks as the Internet, are the basis for an Global Open Computer Network (GOCN), a new channel for the flow of information on a global scale. These are practical examples of the GII in action. We regard this as a definite first step toward a joint future, and we hope that you agree.

■ **NEC:** *Manufacturer profile.* By **Michiyo Nakamoto** in Tokyo

Big supplier's bonanza

Recent moves reflect NEC's interest supplying the European equipment market

The growth in personal communications at home and the global race to invest in advanced communications infrastructure have been a significant bonanza for NEC, one of Japan's largest telecommunications equipment suppliers.

Although it pales somewhat beside the strong increase in NEC's semiconductor business, telecoms provided firm growth of 6 per cent last year and is expected to be a significant contributor to the company's fortunes for the foreseeable future.

The strength of telecoms demand in Japan can be attributed largely to two developments which are greatly expanding the uses of telecoms – the popularity of mobile communications and the excitement over multimedia.

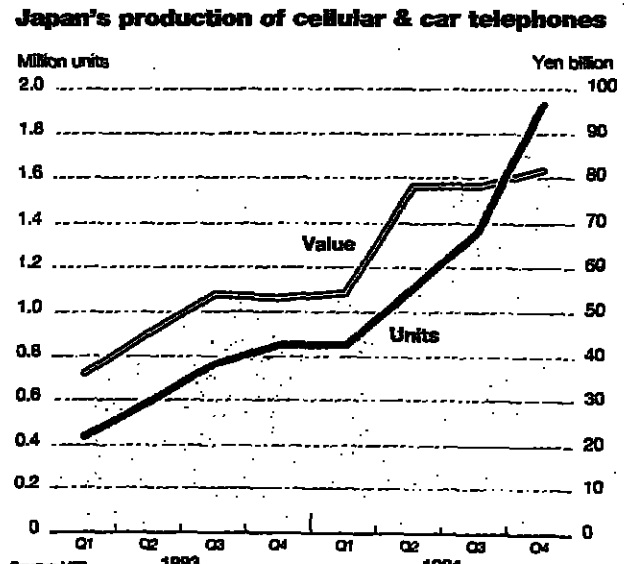
After the Ministry of Posts and Telecommunications liberalised the sale of cellular phone handsets in April last year, the market took off strongly as prices came down and a wider choice of hardware and services became available.

NEC is a top supplier of systems for personal handy phones. While a 20 per cent increase in cellular phone handset units has not translated into higher sales in value terms – due to sharp price falls on the market – the systems side of the business has provided NEC with substantial growth in sales.

At the same time, activity in the Japanese telecoms industry is being sparked by a push to upgrade the country's infrastructure and lay the groundwork for new multimedia services. NTT, the country's largest telecoms operator, is forecasting capital spending of Y1,930bn in the year to next March – the largest figure in the company's history.

Of that amount, Y460bn will go towards the digitalisation of

Japan's production of cellular & car telephones



switches and transmission lines. However, the digitalisation of NTT's trunk lines has been completed so that for Japan's large equipment suppliers, which focus on trunk equipment, demand from investment in digitalisation is levelling off. However, they are, in turn, finding strong demand for applications.

Mr Botaro Hirosaki, general manager of NEC's telecoms infrastructure technology, says that demand is finally beginning to emerge for applications using NTT's integrated services digital network, which was completed about five years ago.

New exchanges

A growing number of corporate users are seeking to install customised, multi-point videoconference systems, using ISDN technology, which is increasing demand for private branch exchanges.

Overseas, NEC has seen growth in PBXs on the back of strong demand for software applications, such as advanced reservation systems, voice messages and movies-on-demand at hotels.

Meanwhile, as NTT focuses its capital spending on installing fibre optic links to the street and home, the spreading need for high-speed data communications to support local area networks or multimedia applications, for example, has prompted buoyant demand for asynchronous transfer mode (ATM) networks.

In order to meet growing needs, particularly among businesses, for high-speed data communications, Japanese carriers are increasing leased line capacity from the current 64-kilobits a second, or 1.5-megabits a second to 6 and even 50 megabits a second, with ATM switches, which are the "ultimate multimedia instrument," employed as the central switching unit, says Mr Makio Inui, industry analyst at Kleinwort Benson.

ATM switches, in particular, are an area where Japanese companies are ahead of their western competitors, and Mr Inui expects demand for these products to grow in the US as well, where NEC already supplies to GTE and Sprint, while Fujitsu, the leader in ATM switches, supplies Bell South and Nynex among others.

Mr Hirosaki believes growth in multimedia communications will continue to provide the industry with promising markets. NEC is keen to expand its operations outside of Japan, where the large five domestic manufacturers – NEC, Fujitsu, Hitachi, Toshiba and Mitsubishi Electric – still rely on NTT-bound business for one third of their combined telecoms revenues, according to Mr Inui.

Their prospects are fairly promising in North America and Asia, where markets are competitive but more or less open.

In North America, the nationwide move to upgrade the infrastructure has maintained demand for their ATMs, while in Asia, the economic growth of the region makes it a promising market, although Japanese companies are competing vigorously among themselves and with the Europeans.

The big challenge for Japanese equipment makers remains Europe. Officials at NEC admit that it has been very difficult for the company to supply the European market where close ties between the telecoms carriers and local manufacturers remain barriers to entry by outsiders.

Despite that obstacle, recent moves by NEC, which bought a 60 per cent stake in a Portuguese telecoms equipment maker, reflect its keen interest in gaining a foothold in the European market.

"Europe is moving to liberalise its telecoms market in 1998, and while I don't expect to be able to sell large switches, we might be able to supply medium and smaller ones, especially those using ATMs," says Mr Hirosaki.

NEC hopes that its stake in the Portuguese company will give it a reliable ally that can represent its interests in EU committees related to telecoms and provide it with a route into the market supplying European PTTs.

"They are desperate to get into Europe, because Europe is the only closed market where making an effort will make a difference and where if one company takes a lead, it will be able to differentiate itself from other Japanese competitors," Mr Inui notes.

هكذا من الأصل

China: Beijing gears up for a massive modernisation drive. By **Tony Walker**

Planners face critical period

Investment of $35bn will be needed by 2000 to attain even modest short-term goals

In Beijing, a woman checks the radio-pager on her belt, whilst using an old-style manual pay phone, at a pay-booth. China faces an uphill task to provide basic telecoms across entire nation Picture: Adrian Bradshaw, Reuter

China could not be accused of under-estimating the task it faces in bringing its telecommunications up to a standard that will *bolster* economic development, rather than weigh heavily on the modernisation drive.

Wu Jichuan, the Minister of Posts and Telecommunications, told an international symposium in Beijing in *April* that "insufficiency in telecommunications capacity and shortage of services has been a major factor affecting China's opening up to the outside world and restricting China's economic growth".

But Mr Wu *pledged* that China would continue "large-scale" development of its telecommunications with the aim of completing a public communications network covering the whole country by the year 2000 to meet basic needs. This is no *small* task.

Investment of Yn450bn (£34.30bn) will be required in the period 1995-2000 to enable China to reach its telephone penetration target of eight to nine telephone sets per 100 people nationwide, and 30 to 40 sets per 100 in the cities. (At the end of 1994 the figure stood at 3.2 per 100 nationally, with density in the cities of 13 per 100).

China has not yet released details of its ninth five-year plan (1996-2000), but an outline of what is envisaged for its telecommunications has been widely circulated.

According to a recent position paper issued by the Ministry of Posts and Telecommunications (MPT), the telecoms sector faces a "critical period" between now and the end of the century in realising its targets. "We are faced with both unusual opportunities for development and severe challenges," the paper said.

"With the informationalisation of the national economy, there will appear a situation where a basic service market and an information communications market co-exist, which may add to pressure on the posts and telecommunications sector."

In other words, competition *from rival networks such as* the newly-established China United Telecommunications (China Unicom) will make life more difficult for the existing operator.

The paper forecast that by the year 2000, the communications industry will have "basically adapted" to the needs of the national economy, but services would still fall short of the more sophisticated requirements of what was described as the "information society."

By 2000, it said, China would have some 140m phone lines in service, each urban household would have one telephone, and the waiting time for installation would be shortened to one month. Waiting time is now between three and six months.

By 2010, 420m lines would be available, and a "broadband *integrated digital* network" would be in place to provide interactive multimedia services in the cities and developed coastal regions – China's version of the "superhighway".

In 2010, the paper forecast, telephone penetration would *have reached 25 sets per 100* nationwide, immediate phone installation would be available, and each village in rural areas would have access to a telephone line. China's postal service would also have grown enormously to 25 letters per head a year, or about 30bn items, compared with 10 per head in 2000.

This year, China plans to spend Yn80bn on further upgrading its telecommunications, adding 14m telephone lines and achieving a telephone penetration rate of 4.2 lines per 100 people nationwide and 17 per 100 in the cities. The MPT is budgeting for revenues of Yn96bn, or a 38.5 per cent increase over the last year.

The MPT has also been seeking to involve foreign telecommunications companies in its *service in an attempt to accel*erate development, but a ban on actual foreign participation in the operations of networks remains in place, with no sign of being lifted.

Experiments

As Mr Wu said in April: "We shall, through experiments at selected places, explore new ways of utilising foreign capital ... on the condition that they (foreign companies) will not hold equity or be involved in the operations and management of the telecommunications businesses."

China's MPT, *in anticipation* of hotter competition from the rival Unicom and possibly other new networks, has also been striving to position itself for the building of a Chinese "superhighway" tied to the Internet. The MPT began experimental links with the Internet in April, and took the service commercial in June. Business clients are the main target for the new service.

However, the MPT, whose monopoly had appeared *unshakeable, is facing a spir*ited challenge from Unicom, and other new entrants to the communications field. In July, Unicom gave notice of what was in store when it started a new digital mobile phone service in China's four largest cities, breaking the existing monopoly.

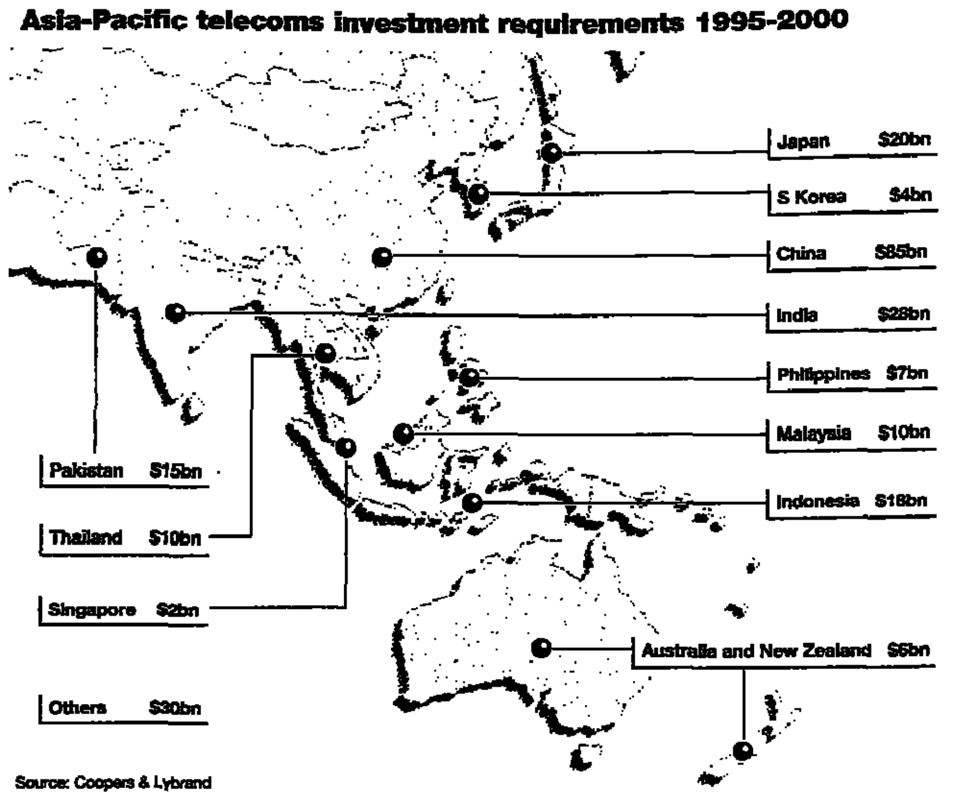
Over the next five years, Unicom, which is owned by a powerful coalition of interests including the ministries of railways, electronics and electric power, plans to spend billions of dollars on new networks, according to a recent report in China Daily.

The paper quoted Zhao Weichen, the group chairman, as saying that by the turn of the century Unicom aimed to be *providing 30 per cent of Chi*na's mobile phone services and 10 per cent of its local and long-distance phone services.

By 2005, Unicom intends to have its own national network in place, and hopes to become one of the world's telecom *giants by 2010, Mr Zhao said. This hardly suggests that Uni*com intends to play second fiddle to the MPT.

Indeed, company spokesmen are making no secret of their *desire to* take on the MPT, and not simply provide supplemental services. "Now, we are so small that we do not pose any threat," Ding Weidong, chief of international co-operation at Unicom, said recently. "But we already can cover all basic telecom services and, in future, we will be a competitor."

Asia-Pacific telecoms investment requirements 1995-2000



Source: Coopers & Lybrand

Vietnam: Investors have worried about a fog of contradictory decisions by the authorities, reports **Jeremy Grant**

Hanoi sends out mixed signals

Confusion 'reflects political jockeying ahead of a crucial party congress'

In 1986, there were only nine, crackly lines connecting Vietnam to the outside world, most of them to the country's main then benefactor, the Soviet Union.

Today, however, the situa*tion is radically different, with* a multitude of switching systems and freshly installed land lines providing most of the country's urban population with telecommunications services of what industry experts say is a reasonable standard.

Vietnam has ambitious plans to build on this, hoping to install three telephones per 100 people by the year 2000, up from a meagre 0.33 telephones per 100 people now. It is particularly concerned about how to ensure access for its massive rural population to telecommunications services. It hopes to attract $2.7bn into the whole telecoms sector by the year 2000.

However, perhaps the biggest question that faces the Vietnamese authorities and any foreign investor considering bidding for business in this theoretically promising market is one of policy.

Foreign investors with experience of doing business with the Department General of Posts and Telecommunications (DGPT) and its affiliate Vietnam Posts and Telecommunications (VNPT) say it is often difficult to cut through the fog of apparently contradictory decisions that are increasingly emerging.

The latest confusion concerns the operating monopoly *held by VNPT, which is the* state-run operator, answering to regulator DGPT. In July, a local newspaper report said that Hanoi would allow VNPT's long-standing grip on the operating side to be challenged by a commercial telecommunications subsidiary of the Ministry of Defence, Sigelco.

Expectations

Foreign telecom officials, based in Vietnam, had long expected Vietnam to deregulate the market and were encouraged by the move, which was billed in the newspaper report as having the blessing of reformist Prime Minister Vo Van Kiet. Indeed, many *companies such as* US West, AT&T and Motorola of the US had been talking to the ministry about a $1bn package to develop a rival military network with the involvement of US investment banks.

Yet a week later, the same newspaper, the weekly *Vietnam Investment Review*, published a statement from the Office of the Government – effectively the premier's cabinet office – denying that the VNPT monopoly had been broken. The military would merely be allowed to enter into joint ventures with foreign *companies to manufacture tele*communications equipment. It would not set up a rival operating network.

Industry officials in Hanoi say privately that the confusion reflects political jockeying within the leadership ahead of a crucial party congress next year and that the military will in fact set up a rival network. But this is of little comfort to foreign investors seeking clear policy guidelines as they hope to expand business in what is seen as a potentially lucrative market.

Britain's Cable & Wireless, France Télécom and Australia's Telstra have been wooing VNPT for contracts to set up operating systems in Hanoi and Ho Chi Minh City, without *concrete results. Indeed,* the only firm deal on the operating side is understood to be one signed by Korea Telecom with the municipal authorities in the northern port city of Haiphong. However politics is not the only impediment. Industry experts say that although there are clear signals from Hanoi that it welcomes foreign involvement in telecommunications, the terms and conditions of any involvement are still unclear.

Under Vietnamese law, foreign companies are not allowed to enter into fully-fledged joint *ventures with Vietnam on the* operating side. The looser Business Co-operation Contract (BCC) is the only option.

Most foreign companies with presences in Vietnam and plans to invest in urban land line or wireless installations have yet to hear from the Vietnamese authorities how long any BCC might last. Topping their list of concerns in this regard is what kind of revenue-sharing ratios are likely to emerge in any eventual BCC arrangement.

Revenues

The only guide so far seems to be a BCC signed some years ago by early bird Telstra, which installed International *Direct Dialling (IDD) capacity* in Vietnam over three years ago and has a generous but undisclosed share of revenues. Telstra sources say they are shortly negotiating an extension of the existing, $197m BCC, which runs out in 1996, and industry experts say it is unlikely that they will secure the sort of arrangement they had with the original contract.

Meanwhile Singapore Telecom, for example, is still waiting to hear whether it will clinch a BCC for a mobile cellular system it installed on a trial basis in Ho Chi Minh City *as far back as 1992.*

Another issue on foreign investors' minds is whether Vietnam will limit the number of foreign operators it will allow into the country given its record on accepting switching systems. No less than 12 different types of switching system are operating in Vietnam, mostly the result of blind acceptance by cash-strapped provincial posts and telecoms authorities of often second-hand technology offered by foreign companies.

"They clearly understand the need for foreign investors," says one Hanoi-based foreign telecoms consultant. "But if you have a series of operators, it would be a big mess."

Most foreign telecommunica*tions officials say* answers to these questions are unlikely to emerge before the eighth party congress, which is scheduled for early to mid-1996.

Asia: Telecom markets will accelerate rapidly, writes **Jenny Walker**

Leading the world in network growth

There is pent-up demand for new telecom services across the region

Telecoms investment in Asia

Figures for 1994 in US $

Country	Total in $ million	$ per inhabitant	As a percentage of revenue
Australia	1,802.7	101.0	17.4
Bangladesh	120.3	1.0	61.7
China	7,921.1	6.7	128.4
Hong Kong	523.4	89.7	15.0
India	1,610.9	1.8	59.9
Indonesia	1,011.2	5.4	68.7
Japan	23,481.1	188.1	35.7
Korea (Rep)	3,364.2	81.8	52.7
Malaysia	1,219.4	62.5	71.2
Myanmar	54.6	1.2	28.6
New Zealand	265.0	75.1	15.7
Pakistan	563.6	4.6	65.6
Philippines	371.8	5.7	49.2
Singapore	342.5	121.5	14.9
Sri Lanka	223.3	12.3	129.4
Taiwan	1,790.7	84.2	33.9
Thailand	187.4	3.2	10.4
Vietnam	88.3	1.3	132.6
US, by comparison	23,346.8	90.5	13.1

Source: ITU, Asia Pacific Telecommunication Indicators, 1995

Asia's booming telecoms markets are expected to see a significant shift in emphasis in the second half of this decade as the world's largest developing economies unveil their most exciting investment opportunities.

In response to what analysts are dubbing Asia's 'third wave' of telecoms reform, China, India, Indonesia and Vietnam, are on track to become the next generation of countries in line for massive telecoms investment and growth.

India's new-found magnetism appeared late last year when more than 300 companies from all over the world responded to the offer of a slice of its undeveloped telephony market. A year on, 16 consortia including US telecoms giants such as AT&T, US West and Nynex stepped forward to offer $35bn in licence fees to the public purse – a sum equivalent to double the national operator's $2.5bn annual budget for the next 15 years.

A similar frenzied response came to Indonesia's call for *five private sector groups to* construct and operate large chunks of the national network. NTT, France Telecom, US West, Telstra, Telekom Malaysia and Singapore Telecom along with local joint-venture partners, are expected to inject around $6bn in licence fees and revenues into the sector in addition to 2m privately-funded lines.

Telecoms analysts are already prophesying that some early investors will get caught out in the current wave of emerging market telecoms fever, but statistics from the International Telecommunication Union, the ITU, only serve to confirm the basis of these new investors' perceptions: after a decade of rapid growth, the region not only continues to lead the world in the pace of network growth, but this incredible pace is accelerating.

Seven of the world's fastest growing networks are to be found in Asia, according to the ITU's *Asia Pacific Telecommunication Indicators*, and mainline growth in the region was around double the world average last year. Yet with penetration rates as little as less than one per hundred head of population in most of Asia's big emerging economies, there is *plenty of scope for growth.* Pent-up demand for telecoms services has surged in response to strong economic expansion, population growth and increasing urbanisation. Analysts at the consultancy, Coopers and Lybrand, estimate that China will need a further $85bn to meet its growth targets to 2000, *while India will require around* $28bn, Pakistan some $15bn and the Philippines $7bn.

Of the total $240bn that the region is looking for by the end of the decade, the consultancy believes some 55 per cent will come from internal funds, 14 per cent from corporate equity, 25 per cent from corporate debt and the remaining 6 per cent from project finance.

> In spite of the high growth expectations, analysts are advising caution

This variety of financial tools was not even available to its emerging telecoms markets, five years ago. The next batch of Asian telecoms issues waiting in the wings are expected to be so attractive as to be *unaffected* by any lingering negativity on emerging market equities.

First in the line is Total Access Communications, a subsidiary of the SET-listed Ucom group, which as a pure-play on cellular in Thailand is almost *guaranteed to attract broad* investor interest.

Next will come Indonesia's domestic carrier, PT Telkom, which expects to raise around $3bn and then hopefully, Korea Telecom to round off the year.

Both these issues are expected to prove extremely attractive as long as they are reasonably *priced. After these will come* the avalanche of around $8bn in Asian telecoms paper over the next two years along with a deluge of cross-border mergers and acquisitions activity as foreign operators team up with new licensees.

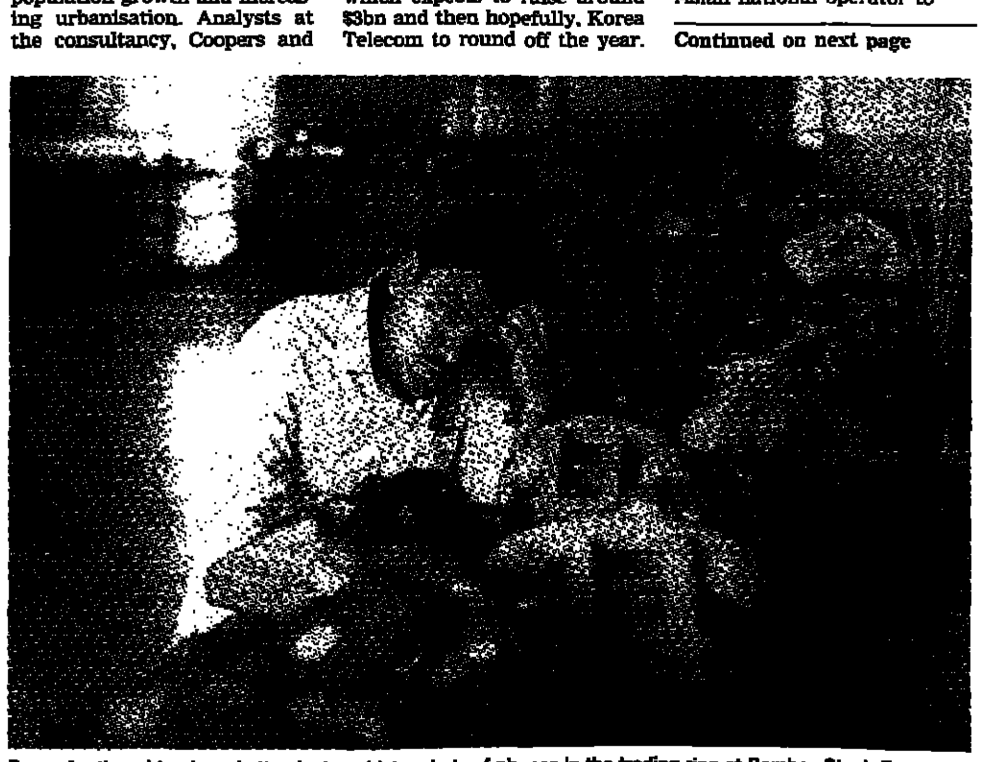
"We *will be seeing a lot more* of the Satelindo-type deals, where local operators look for international partners – companies looking for finance and assistance in competing," says Mr Adam Quinton of Merrill Lynch in Singapore.

During the past 18 months, a growing number of second-tier players have tied with strategic partners: these include Satelindo, Indonesia's second international operator and cellular service provider with DeTeMobil, Deutsche Telekom's cellular subsidiary, in a $586m deal; Malaysia's second network operator Binariang with US West which took a 20 per cent stake; Philippine cellular franchisee Globe Telecom with Singapore Telecom, and many *more.*

Mr Quinton believes that the lack of a partner, even for national operators may increasingly be seen as a negative factor among potential investors as they provide the pulling power to raise capital – *capital which will be in shorter* and shorter supply.

Pakistan Telecommunications (PTC) will be the first Asian national operator to

Continued on next page



Pause for thought: a bored attendant, amidst a circle of phones in the trading ring at Bombay Stock Exchange, during a break in trading. India invested more than $1.6bn in new telecoms last year Picture by Savita Kirloskar, Reuter

Pakistan: Prospective investors await a 26 per cent share offer in PTC. **By Farhan Bokhari** in Islamabad

A rocky road to privatisation

Investor confidence has been dented in the past year

With the year about to end, it is almost certain that Pakistan will fall behind its earlier plan to offer up to 26 per cent of the shares of the PTC (Pakistan Telecommunications *Corpora*tion) to a private investor by December.

After more than four decades of state control, the road towards privatisation for the PTC has been far from smooth. Emerging from a series of controversies, the government's PTC sale plan – almost five years after the initial decision to deregulate the telecommunication sector – envisages selling a 26 per cent share and transferring management to a private owner by spring 1996

The outcome of the PTC offer could well decide the fate of the country's privatisation programme, as many officials remain convinced of its importance for the sale of other public sector utilities. So far, there are many reasons to be concerned, based on experience during the past five years. The first privatisation initiative quickly became hampered by objections from the country's defence and security officials, concerned that vital national security interests would be compromised if the telecom sector went to private control.

These were resolved by a commitment from the government to create a smaller telecommunications company for the exclusive use of defence services from the money raised through the PTC's sale.

In the latest preparation for the offer, Morgan Grenfell, the international investment bank, has now been appointed the financial advisor for the deal.

The move has helped to calm recent concerns that the initiative would be further delayed after a spectacular *fall* in PTC's share prices by over 50 per cent during the past eight months.

Investor confidence had earlier been dented in the wake of last September's sale of 11 per cent of the company's *shares* in a public offer which fetched $900m.

The offer became controversial after it was found that the documents prepared for the deal had overstated the number of telephone *lines, which in* the view of some analysts, exaggerated the company's potential for future profits.

Investors were told that up to 2.5m phone lines were in operation up from the actual *number* at just over 1.8m. In spite of investors' concern over the possibility of similar setbacks in future, senior Pakistani officials defend the earlier offer as a *useful* opportunity to 'test the waters'.

Pakistan's privatisation commission says that it is looking into ways of making sure that the troubles surrounding last summer's share offer on domestic and international markets are not repeated.

"The government will have to manage the next stage of the offer very carefully. Lessons have been learnt from last year's experience," says Mr. *Sirajuddin Cassim, President* of the KSE (Karachi Stock Exchange), the country's largest stock market.

Attractions

Prospective investors looking at the upcoming 26 per cent share offer are likely to find the company presenting attractive opportunities, but will not be able to overlook important difficulties.

*Profits have risen considera*bly during the past three years. The PTC earned Rs16.024bn ($534m) in net profits last year (1993-94), up from Rs14.14bn ($471m) a year earlier (1992-93) and Rs10.99bn ($366m) in 1991-92. Many analysts are also encouraged by the company's potential for future growth and expect the total of almost 1.8m lines in operation to rise to *over 3.9m by the year 2003.*

But there are problems wqaiting to be resolved, too, including manning levels. One leading Karachi stock broker, many of whose clients have bought PTC shares, says: "The company is heavily overstaffed compared to similar concerns in other countries. But lay-offs would create trouble for the new management unless the government can first settle the terms of redundancies".

The government has recently scored an important victory, resolving a big dispute with the labour unions of Wapda (Water And Power Development Authority), Pakistan's largest power generation and *transmission company*, after it delayed privatisation plans for a large power generation plant for several months.

Among other concerns, the effect of recent falls in the share price index of the Karahci Stock Exchange on the pricing of the PTC, represents another uncertainty. In the past, some officials have said that the company could be worth at least $10bn and that its net worth would rise in future, with the confidence that is injected in response to a private takeover. But many KSE brokers are convinced that the recent falls, triggered by a *withdrawal of interna*tional investors from the so-called emerging markets after the Mexican crisis, and fears over Karachi's business stability in the wake of the recent law and order crisis, would pull down the price tag.

Mr. Nasir Bukhari, head of Karachi's Khadim Ali Shah Bukhari, a top brokerage house, says: "It's difficult to say how investors will respond when the offer is finally made."

According to Mr Bukhari, the response from investors will depend on the price of the issue in comparison to other companies on the market, the effect of the troubles in Karachi on investor confidence and the company's own ability to demonstrate its capacity to increase its profits.

Despite the concerns, senior officials say privately that there is little chance for the company to make a u-turn on the privatisation road – "there may be delays, but the future is clear. The government is just not equipped [on its own] to deal with the future challenges of improving technology and profits, for any public sector utility," says one senior official.

■ **ATM:** *Asynchronous Transfer Mode – a key to 'seamless' high speed networks, writes* **Paul Taylor**

Link between two worlds

ATM is set to become one of the *main transmission* methods of the next century

For years, the worlds of computing and telecoms have been separated by the need to translate the digital language of computers into the analogue signals used in telephony.

Now, however, new technologies such as Asynchronous *Transfer Mode (ATM) hold the* prospect of providing seamless high-speed digital multimedia links between computer networks finally removing the distinctions between data processing and telecommunications.

"ATM technology promises to bring about a world in which the distinctions between local and wide area networks disappear," says American Telephone and Telegraph, the US carrier.

It will be "a world in which computers, large and small have global connectivity to multiple information platforms as easily as making a call next door, and many times faster... a world where distance ceases to be a consideration, *and bandwidth bottlenecks are* no longer an issue."

Market analysts agree. ATM *is set to become one of the* main transmission methods of the next century, says Ovum, the telecommunications market research specialists in a new report on ATM in carrier networks, due to be published shortly.

ATM, an advanced packet-switching technology developed by the telecommunications industry in the late 1980s, converts data into short fixed-length 'cells' which can be transmitted at high speed across 'virtual circuits' – connections which do not have to be set up in advance – to establish communications between two parties.

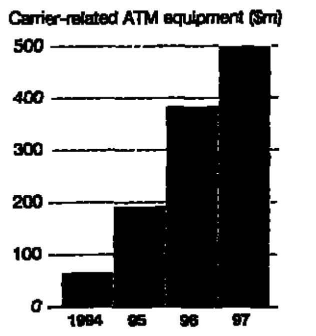
Because the size of the packets is fixed, switching can be *done entirely in hardware* which is much faster that software switching. This allows very high speed switching with negligible delay and constant time intervals between cells – features which are crucial to real-time voice and video.

ATM technology will increase transmission speeds initially to around *155Mbps* (mega bits per second) or 622Mbps, but in the long-term *could push transmission* speeds up to as much as 10Gbps (Giga bits per second). *It is therefore ideal for a wide* range of applications including traditional voice and data communications, imaging and video. Its characteristics make it ideal for the 'bursty' mixed traffic expected on the networks of the future.

"ATM technology has the potential to change the computing paradigm and affect the business of corporations, governments and academic institutions around the world," argues General DataComm, a leading ATM switch vendor.

Market forecast

Carrier-related ATM equipment ($m)



Source: Ryan, Hankin & Kent, Merrill Lynch estimates

Although there are a number of technologies, including Frame Relay, capable of delivering such additional bandwidth and performance there is a rapidly emerging consensus that ATM provides the most advantages – "of all the switching technologies, ATM is the one that holds the promise of handling all types of traffic well, and providing a common telecom architecture in public private and premise networks as well as in the home," says Price Waterhouse's latest technology forecast.

Despite its background in traditional telecoms, the first impact of ATM technology is likely to be in Lans followed by wide area networks (Wans). US companies are already installing ATM switches to help *improve the performance of* their Lans and the same trend is beginning to appear in Europe despite continuing uncertainties about stability, standards and high costs.

In a recent Forrester Research survey, two-thirds of the network planners interviewed from *Fortune 1000* companies said they planned on rolling out ATM within three years. Of those interested in ATM, 88 per cent said they would have either a production ATM Lan or Wan up and running by 1997.

As network traffic grows, so does the demand for virtual *Lan services and for fast Lan* interconnect, says Ovum – "many corporate users already *have successful private ATM* networks, and they are now pressing telcos to offer greater public access to ATM at lower cost".

Corporate users who have solved bottleneck and bandwidth restrictions in the Lan environment are now seeking the same kind of performance – at realistic prices – across their metropolitan and wide area networks. Some telecom carriers, including AT&T and Sprint in the US, have begun to offer their customers services based on ATM technology although most network operators are still in a trial phase.

In Europe, some telecom companies, including British Telecommunications and Telecom Finland have established broadband Lan interconnect services and the Finish PTT has installed the world's first public service ATM network.

In Britain, Cable & Wireless began live transatlantic ATM trials last December. Duncan Lewis, managing director of the group's business networks operations at the time, said: "These trials are a significant step towards delivering the broadband multimedia communications services that will change the way we do business on a local, national and international basis.

*"When implemented success*fully on a wide scale, ATM will revolutionise business structures, speeding such processes as trans-national product development and international trading to create a truly global marketplace.

"However if these services are to be effective in bringing truly commercial advantages to our customers, we need to look at how their capacity to transmit information of all kinds at previously undreamed of rates will interact with existing computer and voice applications and current business methods."

Generally, however, telecom operators have been slow to introduce ATM based services. *Ovum, a staunch ATM advo*cate, argues that 'telcos' have been slow to respond to end-user demand for ATM because:

□ In Europe, in particular, they are still pushing interim solutions like frame relay and switch multimegabit data service (SMDS), a connectionless packet service, rather than offering a fully integrated broadband network.

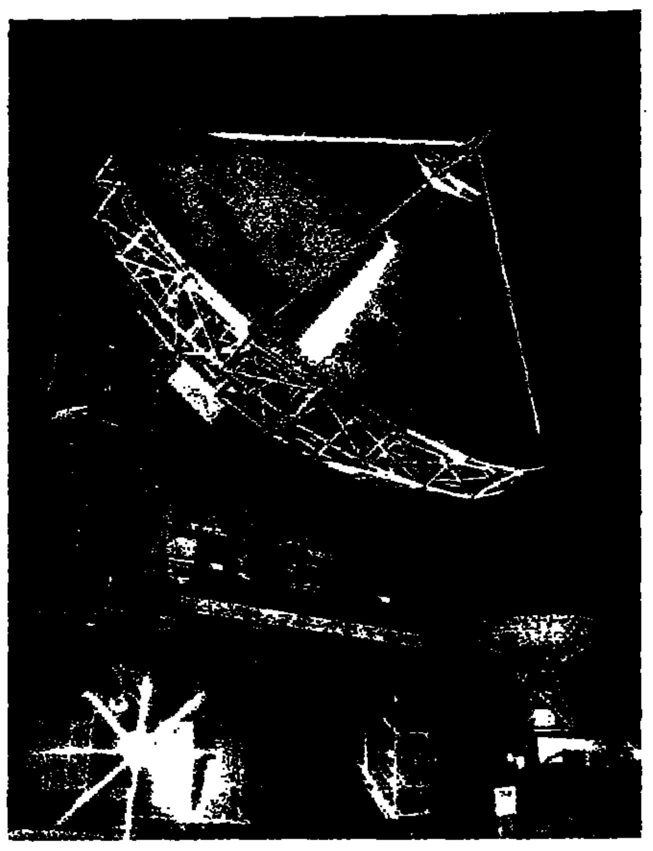
□ The operators have little experience of ATM, are unsure of the best technological options, and do not know how best to integrate current user ATM networks. As Dave Schriftgiesser, AT&T's networked systems broadband networking director, notes, the traditional telecoms operators have limited experience in operating and constructing fast-packet hi-tech data networks like ATM.

□ They are unclear as to how quickly they should introduce ATM and how much to charge.

□ They fear that ATM virtual paths will mean significant revenue losses from corporates which will use them for voice as well as data communications. Most companies pay fixed monthly fees to lease circuits from telephone companies for each type of traffic. However, by consolidating data, voice and video information – and only being billed for the bandwidth they actually use – companies should be able to reduce their costs.

Nevertheless, Ovum concludes that "established telcos are beginning to realise that if they do not offer ATM services, new entrant telcos, will. There are real opportunities for dynamic telcos who respond to customer demand, and real threats to revenues for telcos who are slow to implement ATM."

Among the new entrants who are lining up to deliver end-to-end broadband services are the cable companies whose fast-growing fibre installations mean that broadband capacity is not an issue. Meanwhile, on both sides of the Atlantic, new telecom service providers are already delivering Lan interconnect services based on ATM.



ATM holds the prospect of providing seamless high-speed digital multimedia links between computer networks – such as the system shown above – and the world of telecommunications. For the moment, however, public ATM is an embryonic market where the telcom companies call the shots, say market analysts. Pictured, left, is BT's Goonhilly Downs earth station in Cornwall.

Big benefits

In the US, MFS Datanet launched America's first nationwide ATM network in 1993 and added an international leg linking up with London, Paris and Frankfurt. The new services is bringing immediate benefits to MFS Datanet's corporate customers. For example, it used to take 30 minutes to transmit the contents of an annual report from New York to London. Using the ATM link, it takes less than 40 seconds.

In Britain, Reading-based Fibernet launched its Total Area Network (TANet) service – a national high-speed 622Mbps ATM-based service designed to allow its customers to send and receive data, voice, and video services throughout the UK – two weeks ago.

"These networks will allow our clients to operate their remote data, voice and video systems as if they were physically next to each other," says Charles McGregor, managing director of FiberNet.

In the face of this new competition Claude Haw in charge of Newbridge's fast packet networks division, notes that traditional service providers are adopting two different approaches.

"Some are committing resources to trying out high-speed ATM, offering customers bandwidth to play with, running applications they have developed themselves. They might not make any profit from them in the short term, but they will have learned a lot about how they work... the second approach focuses specifically on the services themselves. Video-on-demand, multimedia, distance learning and so forth."

For equipment vendors, ATM for the network operators represents a huge, largely untapped market for their innovative new products, although they may have to wait a while. In a recent report, Joseph Bellace and Michael Beardsley of Merrill Lynch estimated that between 60 and 80 per cent of ATM switches will be installed in customers' premises for the next several years.

"ATM switch vendors, including Newbridge Networks, the ATM Wan market leader, General DataComm, Cisco and StrataCom are well-positioned to benefit from significant ATM market growth forecasted for wide area enterprise ATM networks," said the Merrill Lynch study.

■ **Optical fibres:** Ways to send more messages down the line – report by **Michael Kenward**

Light relief for today's long distance telephone links

Advanced telecoms technology is abandoning electronics and moving to light as a way of carrying more information through the phone system

Optical fibres – tiny strands of very pure glass – and the digital revolution, have changed the world of telecommunications in just 20 years. *Digital* techniques turn information into the computer's language of '1s' and '0s'. Fibres carry those nessages as tiny pulses of light.

*At first the saviour of tele*phony, these technologies have opened the doors to a wide *range of new communication* systems.

Images and video require *just too much bandwidth for* conventional telephone wires. Higher bandwidth – a measure *of the information carrying* capacity of a telecommunications system – means faster communication.

But without fibres, and their almost unlimited bandwidth, it is hard to see how anyone could think of delivering television to the home, or out in the other direction, through a fixed link.

If optical fibres had not arrived when they did, the global Internet could not have reached its current size. The promised multimedia revolution would also be a distant dream.

Today, optical links carry *are than 90 per cent of the* UK's telecommunications traffic and 65 per cent of international connections.

Optical transmission is made easier by an important development that has made a rapid impact on long-distance communications – the fibre amplifier. Optical fibres carry their signal for hundreds of kilometres before it becomes too blurred or weak to be understandable. Long-distance cables, electrical or optical, contain repeaters, spaced at regular intervals, can amplify the signal before it becomes lost in the background noise.

Before the advent of the fibre amplifier, the only way to regenerate a signal was to take the light pulses, turn them into electronic signals, put these *through amplifiers, turn the* electronic message back into light, and then to return that *to the optical cable.*

As its name suggests, the optical amplifier works by regenerating the optical signal itself, without any electronic intermediary.

In 1986, a *team* working with Professor David Payne at the University of Southampton *showed that they could turn* optical fibres into amplifiers by incorporating a trace of additive to the glass. The Southampton group first 'doped' fibres with the chemical, erbium. When light energy, usually from solid-state lasers similar to those used in CD players, enters doped fibre, the light "excites" some of the erbium atoms. Light travelling down the fibre extracts some of this energy from these atoms, gathering strength in the process. Such was the demand for this technology that within five years of this academic discovery, fibre amplifiers entered commercial operation in underwater links. Even before that, they had begun to make on impact on land-based links.

One of the first projects to include fibre amplifiers in an optical cable was in Thailand in 1993, when STC Submarine Cables put these amplifiers at the ends of telecommunications links that ran down the coast.

Earlier this year, the company installed TAT12, the first transatlantic link incorporating optical amplifiers. Along with TAT13, to be installed next year, this network could, using the latest techniques in signal management, carry more than a *million* telephone *conversations at the same* time. The last copper cable across the Atlantic carried just *4,200 conversations.*

Higher capacity

Demand for more communications capacity does not nec*essarily mean adding more* optical cables to the global network. New ways of combining *signals and squeezing them* into the same fibre link can double the capacity of a particular link.

Cables conventionally operate at 2.5 gigabits a second (GB/s) – that is, 2,500 million bits a second. In one experiment last year, a group at AT&T Bell Laboratories in the US used a technique known as wavelength division multiplexing to combine sixteen 2.5GB/s channels on a 1,400 kilometre laboratory link.

This summer, Alcatel conducted trials of the same technique on a commercial system, on Europe's first submarine cable with fibre amplifiers, the £80m Rioja link between Santander in Spain and Cornwall in the UK.

During the experiment, the cable, designed initially to operate at 2.5 gigabits/second, worked at 10 gigabits/ second. By combining the cable's four optical links, the total transmission distance was 3,700 kilometres.

The same experiment also showed that it is possible to remove one traffic flow from the *middle* of a link and to replace it with a completely different stream of information. Undersea links have traditionally been point-to-point systems. The Alcatel experiment showed that it is possible to re-route traffic in a fibre link, as demand changes, or if *one path fails. Thus, optical* fibres themselves because a part of the network management system.

While fibre amplifiers first made their impact in long- dis*tance communications, these* amplifiers could also have a significant impact on commu*nications over much shorter* distances.

Dr Alan Steventon, of BT Laboratories at Martlesham Heath in Suffolk, believes that recent progress with new types of fibre amplifiers could help solve one of the challenges facing telecommunications of how to bring the information superhighway "to everyday customers".

With today's computer telephone links limited to working at 28,800 bits per second – or

Continued on page 30

■ **ISDN:** Integrated Services Digital Networks gain ground – report by **Bill Johnstone**

Key role in multimedia

ISDN is considered the classic vehicle for mixing video, voice, graphics, colour and text

ISDN (Integrated Services Digital Network) is hailed as one of the technologies crucial to the evolution of any information superhighway. Digital mixtures of text, audio, video and graphics are the attractive cocktails offered by this medium providing an effective standard for multimedia transmission.

While Europe boasts an initiative which has embraced it and evolved a policy designed to ensure that the Community exploits it, in certain quarters the technology is still anxiously awaiting acceptance.

Its history is peppered with indecision and conflict, as much a monument to its political as to its technical profile. It has taken nearly two decades *for it to creep from drawing* board to council chamber and although considered the natu*ral successor to a sluggish* analogue system, ideological agreement was to prove as dif*ficult as any technical one.*

At the beginning of the 1980s the CCITT (the International *Telephone* and Telegraph Consultative Committee of the International Telecommunications Union) began making significant strides towards this digital goal. The new infrastructure, it contended, would support a wide and revolutionary range of voice and non-voice applications.

By the end of the decade the same political commitment was gaining momentum in the European Commission. Europe was now alert amidst talk of a Japanese plan to build a nationwide fibre optic network early in the next millennium and rumour that the US was preparing to react to the threat.

So, after nearly 20 years the technology and the politics acquired consensus. The initiative of the European Commission inspired a 'Memorandum of Understanding' to be drawn up at the end of the 1980s and signed by 26 telecom operators in 20 countries. They agreed to implement, by the end of 1993, the technical standards (termed Euro-ISDN) set for the continent by the European Telecommunications Standards Institute.

Digital ISDN voice, data and video signals transmitted at 64,000 bits/second are called bearer or B-channels. An additional channel (either 64 or 16kbits/second) is used to con*trol the signals*, called a directing channel or D-channel.

Using these building blocks, *two levels of service are* offered by most ISDN providers, BT and Mercury being the *two primary carriers in the* UK. They are Basic Rate Access, comprised of two *bearer channels plus one* directing channel (2B+D), allowing two simultaneous ser*vices using a pair of wires,* while Primary Rate Access with (30B+D) channels uses fibre or microwave and has capacity for 30.

According to Dataquest, at the end of 1994 there were 5m B-channels spread over the world's major markets - 69 per cent in western Europe; 16 per cent in Japan; and 15 per cent in the US.

The latest European figures show that the growth has been sustained. By the end of June 1995 there were around 4.6 million B-channels installed in Europe – 51 per cent in Germany, 21per cent in France, 15 per cent in the *UK*. 4 per cent in Switzerland and 9 per cent in the remainder.

Those faltering steps which took place with the commitment in 1990 may soon become large confident strides. The European memorandum and the political endorsement given to it particularly by the French, the British and the Germans has set the stage, it is hoped, for worldwide adoption of the technology. Now some 30 countries, including the middle east and parts of eastern Europe are involved, two of the latest signatories being Hungary and Israel.

According to the European vision, ISDN will provide advanced telephony (call waiting, re-routing, caller identification), high speed communication between computers and a host of other advanced services. *Among these would* be fax transmission 20 times faster than normal, teletext 100 *times and videotex (text with* graphics or photographs) 30 times faster.

Cost savings

Retail, medicine, travel, banking and security are but a few of the sectors which are *exploiting ISDN, transforming* their businesses significantly with demonstrable savings and improved efficiency.

For example, at NatWest Securities, at midnight every weekday, closing prices are transferred from the main database in Paris to Edinburgh. The equivalent of 60 pages of A4 data are sent. With ISDN the time for transferring that volume has dropped from 23 minutes to 25 seconds.

In retailing a lattice of ISDN lines connects outlets to a central hub. This wagonwheel effect allows electronic fund transfer, video surveillance, point of sale and a range of activities linked to a control centre.

Laura Ashley, the fashion and home furnishings retailer, for example, uses ISDN at one level to enhance the speed of credit card validation and at another to monitor trading.

Travel agents are also adopting the technology to provide live interactive on-line information and videos where dream vacations can be briefly, albeit vicariously, sampled.

The petrol forecourt is another sector courting the new technology. Petrol tank levels, car washes and instant price changes are all features of the ISDN system, again connecting the satellite outlets to a central hub.

Clearly, the various levels of sophistication are reflected in the range of prices. A business with basic service would expect to pay about £400 for connection, from £200 for a *computer card (resident in the* office computer), a further £100 for the computer software and rental of about £84 a quarter plus telephone call charges.

Those price differences across Europe vividly reflect approaches to marketing. For instance connection charges in *France or Germany can be an* eighth that of the UK (between £50-80), but the respective calls *charges are nearly four times* that of Britain.

Whether ISDN will ever realise its full *promise or potential* has yet to be determined. The European Commission has made *its commitment to* drive the technology. It believes that ISDN will become a vital ingredient in any competitive European environment while bringing untold social benefits into the home of the ordinary subscriber.

It is hoped that this commitment and that of Europe's telecom operators is enough.

Cautious views on Asian markets

Continued from previous page:

make a strategic sale when it offers 26 per cent to a foreign telecoms giant early next year.

In spite of Asia's exceptional growth expectations, especially in cellular markets, analysts are advising caution, particu*larly in selecting stocks.*

"I think that the big thing that will affect investor perceptions in the next few years will be the fact that a number of Asian countries – Thailand and Malaysia being the two classic examples – are going to slow down because of the success of their telecoms policies," says Mr Andrew *Harrington* of Salomon Brothers.

"In Malaysia for instance, you now have a *higher pene*tration than you might expect, given the level of economic growth, which means that industry growth is slowing,"he says.

Less than one-in-four new subscribers on the fixed-wire side are business subscribers which means that average revenues per line are *declining* which in turn means that the overall growth rate is declining.

"On the other hand," says Mr Harrington, "markets which historically haven't had high growth rates in telecoms are set to accelerate very substantially."

*India, China and the Philip*pines are among these, he adds. Whether Asia's phenome*nal telecoms growth of the past* 5 years is sustainable across all markets is a question upon which analysts cannot agree.

Some are taking an apocalyptic view that the bubble must burst at some point in the future, while others maintain that Asia's economic health is allowing the region to attract *finance and foreign investment* at the same time as pushing ahead with liberalisation. In this last respect, Asia is an entirely new phenomenon in the history of developing telecoms markets, they say.

What all industry observers do agree on is that the region's governments are pushing *through liberalisation schemes* at a rate far quicker than anywhere else and in ways that *are as different as the individ*ual countries themselves.

China is experimenting with revenue-sharing options that circumvent its strict rules on non-foreign operation of telecoms networks; Indonesia is offering attractive limited-*life* concessions to construct lines in partnership with the domes*tic carrier; and India is taking* an very unorthodox route by inviting new private operators to compete head on with the state-run DOT (Department of Telecommunications).

The Philippines is offering a unique 'carrot and stick' approach, enticing new entrants with the promise of *lucrative cellular and interna*tional telephony licences on the condition that they build *local telephony* lines.

■ **ISDN applications:** The 'small office, home office' (SoHo) *sector shows promise*, reports ***Julia King***

The market hots up

US companies show new interest in UK expertise

ISDN is one of those technologies whose time has *always been just around the* corner. On paper there appears little to beat it: digital lines offer the user high accuracy, rapid connection and dial-up pay-as-you-use type connection.

The lines are capable of supporting both telephony and data communication. They *offer an alternative to users* whose only other option before now has been to suffer the inadequacies of pumping data down an analogue line with variable results – or to pay the price for installing a leased line: a solution that takes itself *immediately out of court* for all but the biggest companies.

This latter reason has led many to affirm that the *largest* market for ISDN lies in basic rate with the SoHo (Small Office, Home Office) type of organisation or user. As yet, this market remains predominantly untapped, notably in *the UK*, where pricing is punitive. Figures published by Telecomeuropa show that the UK *has approximately three basic* rate lines to every primary rate line, whereas the ratio in Germany is some 20 to 1. The figures would appear to support the theory that the UK market for basic rate ISDN is grossly suppressed.

There is now considerable activity within the market, as evidenced by the spate of *acquisitions* of companies within it. In the last few months in the UK, Sonix has been acquired by *3Com*. Scorpion Logic has been acquired by remote connectivity specialist, Xylogics (which is now itself in the process of being acquired by Bay Networks), Securicor 3net has purchased WISDM and has also acquired Pacific Rim company, Network Dynamics and Securicor Telesciences *of New* Jersey, while *Spider Systems has been* acquired by Shiva Corporation.

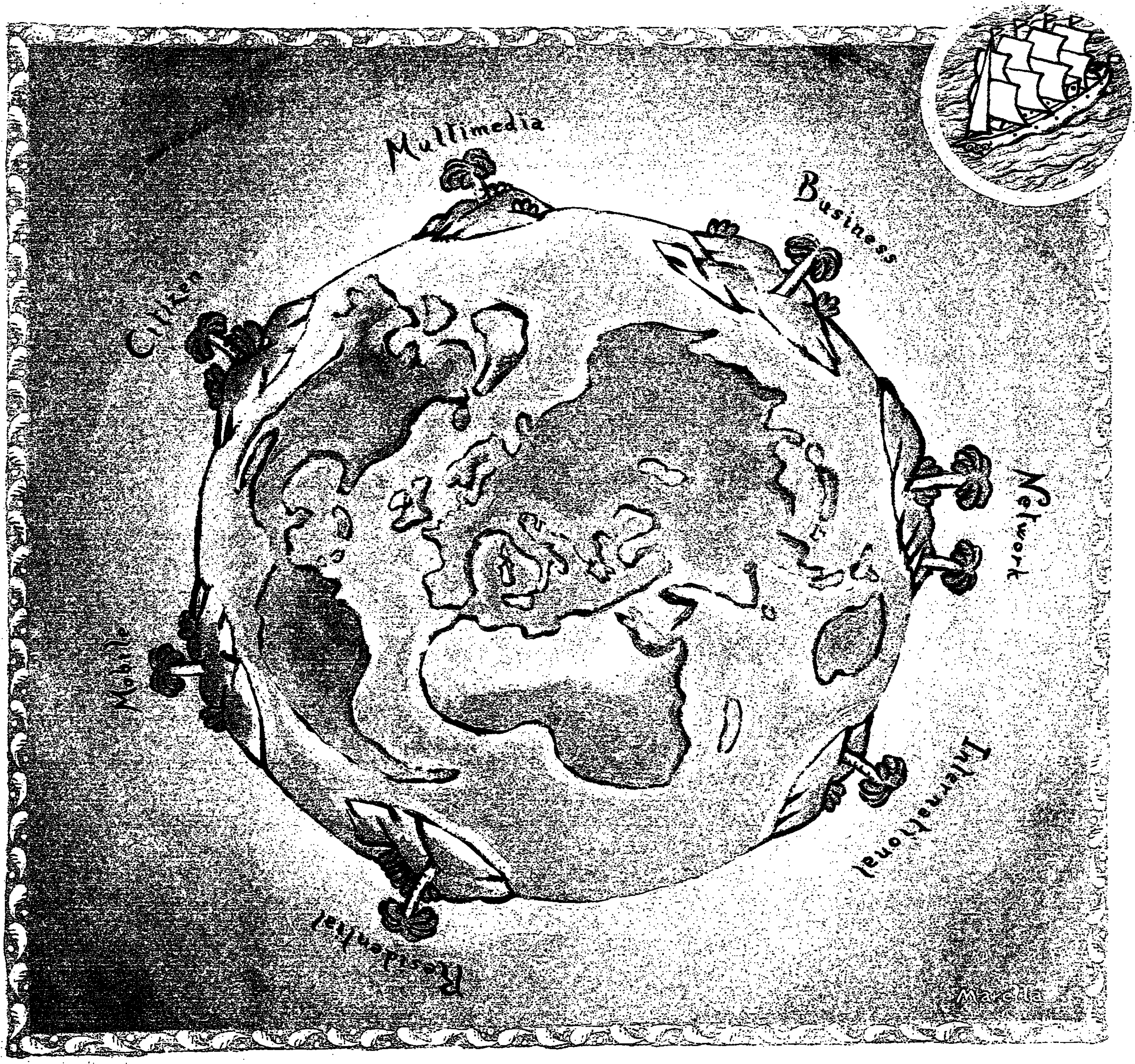
For the main part, these acquisitions are of UK companies by US companies. This indicates the level of expertise that has been built up within the UK in ISDN and the desire of US companies to make inroads into a market that they obviously believe to have considerable potential. On the other hand, the UK's Securicor 3net is *spreading out* into North America and the Pacific Rim through its acquisitions.

Despite the promise of the market, operators still see the need for promotional activity

Continued on page 30

هكذا من الأجيل

Visit the Seven Isles of Stet at Telecom Geneva '95. The world of telecoms will never look quite the same again.



A WORLD IN PROGRESS

At Telecom Geneva this year, don't forget to take a trip around the Seven Isles of Stet. Stet Group is a major global telecommunications group, dedicated to helping people and companies work together better and more efficiently the world over. ***You can visit Stet's Seven Isles of Telecommunications at Stand 2100, Hall 2, Palexpo, from 3 - 11 October 1995.***

TELECOMMUNICATIONS IN ITALY AND THE WORLD

■ Telecoms in transition: The predictions of influential US academic, Nicholas Negroponte, are reviewed by **Richard Handford**

The shape of things to come

The move from analogue to digital technology heralds a range of new services

The transition in the telecommunications industry from analogue to digital technology might well change the way we communicate with one another. It will almost certainly transform the telecommunications carriers who offer us services.

Some of the most informed speculation about how this future might look has come from Nicholas Negroponte, the US academic who is also a columnist in the influential US magazine *Wired* and the author of *Being Digital*, published in the UK earlier this year.

Negroponte argues that completely new media and telecommunications services will result from the digital combination of voice, video and data, to the point where differentiating between the previously separate industry sectors would be irrelevant.

In addition, digital technology would allow information to be more selectively screened and sorted to fit a user's individual requirement. The future then, according to Negroponte, will both involve blurring existing differences between services and increasing their differentiation.

He gives the example of how viewers would no longer need just to watch television to receive a weather report. Instead, a customer who happened to be especially interested in the weather could receive a computer model of local conditions accompanied by a voice report, a printed-out map or even the weather report narrated by a favourite cartoon character.

Carriers are already finding they can only create innovative new digital services through alliances with companies from other sectors such as cable television operators, computer companies, TV networks and film studios.

The services that will arise from these new partnerships are not yet defined, although video-on-demand is the most quoted example of what is possible. It need not be the most popular – a Time Warner trial over one of its cable television networks earlier this year found calling up any one of a choice of exciting movie releases was less exciting for customers than using the new interactive service to order stamps from the post office.

Equally mundane are some of the existing digital services offered by telecom carriers. Digital technology, for example, clears interference on phone calls although, interestingly, users of newer digital cellular phones complain about their voice quality compared to older, analogue cellular phones. They say older, more familiar analogue phones sound more "real" and that a digital voice sounds disembodied.

Digital communications also allow carriers to deliver customers' communications faster and in a more flexible way. The most obvious example is the private circuits supplied to corporate customers for carrying their internal data communications. Digital circuits can be set up at shorter notice and carry higher speed services than their analogue predecessors.

Telecommunications carriers must find new partners if they are to be involved in this new synthesis. The first serious such alliance was the aborted 1993 takeover of the largest US cable operator Tele-Communications Inc (TCI) by Bell Atlantic, one of the seven regional Bell operating companies who run most of the local telephone services in the US.

In *Being Digital*, Negroponte described this alliance as being about as interesting as two plumbing firms joining forces since they are both in the business of transporting information to end-users, rather than creating the information itself.

More interesting, he suggested, were two rival partnerships between, on the one hand, Disney and three Bell companies: Ameritech, BellSouth, SBC and the largest independent carrier GTE: and on the other, Hollywood agency Creative Artists Agency (CAA), headed by Michael Ovitz, allied with three other Bells: Bell Atlantic, Nynex and Pactel.

> Metaphors to describe the future of telecoms include 'superhighway' and 'digital supermarket'

The latter alliance, known as Tele-TV, is thought to be re-assessing its strategy in the wake of Ovitz's departure to head Disney.

More such deals are likely to develop, Negroponte says, pointing to the recent mooted bid by a software company and broadcaster for a TV network: "Look, Microsoft and Turner are already mumbling about buying CBS. Most of this is about getting into the home."

Telecommunications carriers all over the world are looking at similar partnerships, although none have forged equity links as in the US. BT, for instance, has agreements for its commercial video-on-demand trial, which started in July, with a number of suppliers, including film studios, television companies and retailers.

While telecommunication carriers have access to the home via their networks, what they lack is the material that will create value out of having a digital link to customers. The conventional analysis is that the cost of transport – the telecommunications carrier's core business – will become nominal over the next few years. Does this mean the only option for telecommunications carriers is to hire Steven Spielberg as CEO?

"The surplus of bandwidth means you cannot just ship bits. You need to add value to them. Whether that means you make them from scratch is another matter. Steve Spielberg would be as good at running a telecom company as Ray Smith (chief executive officer of Bell Atlantic) would be at making a movie. Let's not confuse what we each do so well," says Negroponte.

The lack of clarity about the future shape of the telecommunications industry has given strength to the "superhighway" metaphor of a network transporting information between users at high speed. The metaphor implies the value of digital technology is in the speed at which information is transported, not in the way digitisation makes it possible to merge and enhance the information.

Nicholas Negroponte, the US academic: new services will emerge, allowing information to be more selectively screened and sorted

An alternative metaphor was recently put forward by John Sculley, the former head of Apple. He talked about a digital "supermarket" where users can browse and choose between various products. Negroponte finds this a partly more satisfactory image than the superhighway – "it covers the transactional and commercial side, but would hardly reach the important aspects of education and entertainment".

Negroponte himself will not be drawn into any helpful metaphors: "It really is about digital living."

The world's top 25 international telecommunications carriers

Figures for each year show outgoing or carrier-billed international telephone traffic, in millions of minutes

Rank	Company	Country	1994	1993	Change '93-94
1	AT&T	United States	7947	7129	11.5 per cent
2	Deutsche Telekom	Germany	5147	4680	10.0 per cent
3	MCI	United States	3517	2839	23.9 per cent
4	France Télékom	France	2603	2576	1.0 per cent
5	BT (a)	United Kingdom	2489	2310	7.7 per cent
6	Telecom Italia (b)	Italy	1708	1610	6.1 per cent
7	Swiss PTT	Switzerland	1649	1572	4.9 per cent
8	Stentor (c)	Canada	n.a.	1430	n.a.
9	Hong Kong (a,d)	Hong Kong	1578	1377	14.6 per cent
10	Sprint	United States	1471	1175	25.2 per cent
11	KPN	Netherlands	1346	1238	8.7 per cent
12	China MPT (d)	China	1150	895	28.5 per cent
13	Belgacom	Belgium	1049	979	7.2 per cent
14	Mercury (a)	United Kingdom	1018	820	24.1 per cent
15	KDD (a)	Japan	996	952	4.6 per cent
16	Telefónica	Spain	948	847	11.9 per cent
17	Téléglobe	Canada	861	761	13.1 per cent
18	Austrian PTT	Austria	819	767	6.8 per cent
19	Telmex	Mexico	721	625	15.4 per cent
20	Telstra	Australia	710	640	10.9 per cent
21	Telia (e)	Sweden	697	685	1.8 per cent
22	Singapore Telecom (a,f)	Singapore	586	480	22.1 per cent
23	Worldcom (g)	United States	555	n.a.	n.a.
24	DGT Taiwan	Taiwan	498	441	12.9 per cent
25	TeleDanmark	Denmark	486	452	8.0 per cent

(a) Data for the fiscal year, ending March 31,1995.
HKT and Mercury are majority-owned by Cable & Wireless (UK).
(b) Combined totals for Iritel and Italcable. Prior to 1994, Iritel (formerly ASST) handled intra-continental traffic only, and Itacable carried overseas traffic.
(c) Stentor was formerly Telecom Canada; Stentor traffic is for US only, of which approximately 70 per cent is originated by Bell Canada.
(d) Includes Hong Kong-China traffic
(e) Telia AB was formerly Televerket.
(f) *Singapore Telecom data include traffic to Malaysia (except local border traffic).*
(g) Worldcom figure is combined traffic from IDB, Wiltel and LDDS.
Source: TeleGeography, Washington; telephone +1 (202) 467-0017.

Digital technology clears interference on phone calls and allows telecommunication carriers to set up new circuits at short notice and to deliver customers' communications faster

Advanced optic systems

Continued from page 28

perhaps 250,000 b/s with the right hardware and software – it is completely unrealistic to think of sending images to compete with electronic games over ordinary telephone lines. The carrying capacity of the communications has to increase by a factor of 10 or more for such uses.

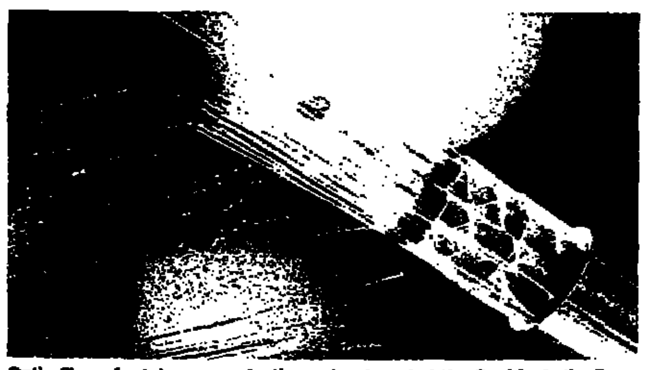
While optical fibres clearly hold out the hope of achieving this communications rate, the cost of cabling Britain, using current technology could approach £15,000m, says Dr Steventon.

Such a bill might not be excessive if solid earnings were in sight, in the shape of paid-for cable TV. But current legislation excludes BT from this market.

With so many doubts hanging over the revenue that other services might generate, BT runs an R&D programme that aims to bring down the cost of fibre links.

A recent development by the opto-electronics group at BT Laboratories (BTL), near Ipswich in Suffolk, could cut the cost of bringing fibre a step closer to the home.

Here, conventional semiconductor lasers will play an important part. Fibres are so small that it is difficult to line them up with the output from a tiny laser – and this complex alignment procedure puts up the cost of key components in fibre-optic links. Dr Steventon estimates that by combining the design and fabrication of lasers with the micro-engineering techniques of semiconductor electronics, the new procedure could cut the price of this particular link in the chain from £100 to £10.



Optic fibres for telecommunications, developed at the Sophia Antipolis science park, near Nice, in southern France

Such components could make it possible to build communications networks in which a single optical fibre feeds 3,000 homes. Fibre amplifiers are important here, too.

Split an optical signal many times and – without the assistance of an amplifier – it would quickly become too weak to deliver its message to its destinations.

The fibre amplifier is the first step towards systems where optical processing dominates, diminishing the role of the electronic circuitry that now performs most of the hard work in telecommunications systems. BT is one of a number of organisations trying to cram as much work as possible in to the optical parts of the telecom networks.

BTL's latest achievement was to read the addressing information on data sent down a fibre: because so much information travels down a single optical link, each 'packet' of data carries an address that describes where it has come from and where it has to go.

It usually requires an electronic 'router' to read this address, but BT has now succeeded in reading the address optically, rather than electronically.

"This greatly simplifies the design of the router," comments David Cotter of BT Laboratories. It also makes it possible to build systems that are 100 times faster than existing technology, he adds.

■ **Computer/telephony integration - CTI:** The market is set to soar, reports **Claire Gooding**

Operators may face extinction

Phone operators or 'agents' may be facing extinction, just as rooms full of typists, key-punch and data-entry clerks have become a thing of the past

Better communications in the financial services sector: Simone Griffen, a Nationwide mortgage adviser, talks to and sees Hazel Cook at the Nationwide call centre – via a PC Videophone from British Telecom

The integration of computers with telephony – CTI – is making great strides, but with it, jobs are either disappearing or changing.

In the US, the population of agents is already in decline, according to Ian Hardman, of Brite Voice Systems Europe, who also sits on the steering committee of the Call Centre Management Association, the CTI trade association in the UK.

"The larger implication is that no matter how much European culture resists the change, ultimately the machine will replace live agents in those areas where it can. If you look at almost any transaction process, you'll find someone in the US who has automated it," he says.

CTI is usually found at the heart of an enterprise. It often comes about because of a "business process re-engineering effort" that has concentrated on cost-cutting and efficiency.

When IT gurus talk wisely about "moving IT closer to business", the CTI community must congratulate itself: it has always been closely associated with the business needs of its users, such as the mail order giants taking thousands of orders over the telephone daily.

Nevertheless, CTI suppliers are far from complacent. The entry of such computer giants as Novell and Microsoft into their hitherto small niche may well transform CTI prospects, according to a recent report, *Computer Telephone Integration: the business opportunity*, published by consultants Ovum. Analysts predict massive CTI growth in Europe, from today's levels of US$539m (£336.8m) to US$3.3bn in 2000. "Independent software vendors who write CTI applications will now have a mass market to write for," adds Simon Glassman, co-author of the Ovum report. "CTI will be easier to cost-justify, because shrink-wrapped applications will bring down costs."

CTI may well become more accessible and affordable, and begin to appear in smaller departmental applications. Microsoft's promise to integrate voice and telephone applications into the Windows '95 environment may even have an impact on the domestic market.

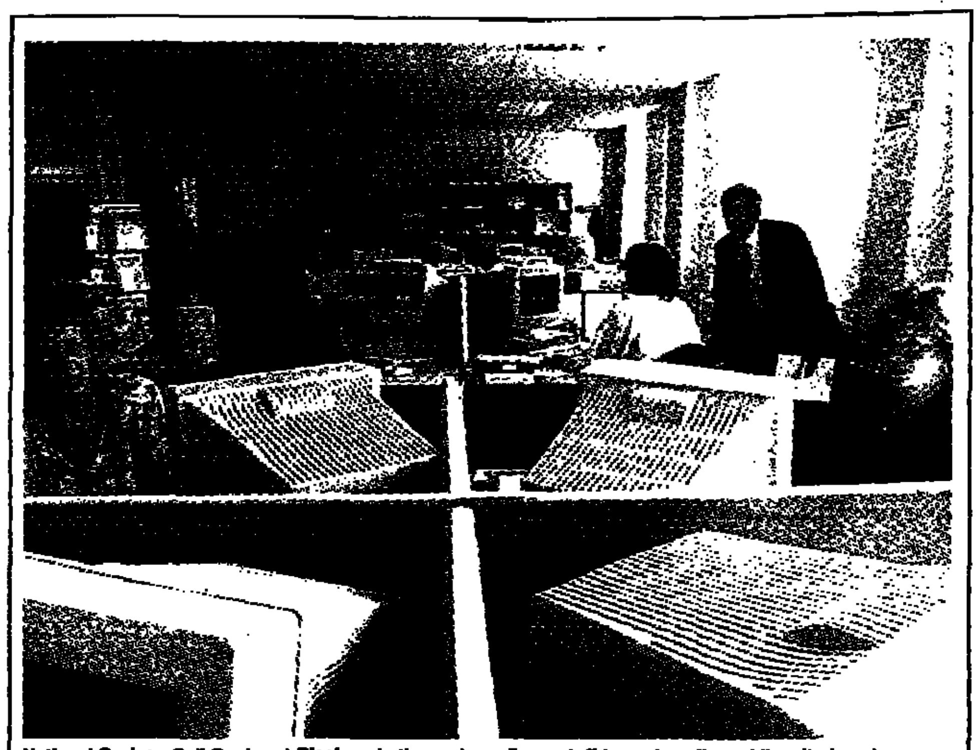
US suppliers have confirmed that a great number of the the Pentium-based computers currently being sold with Windows 95 are for home use. Microsoft are encouraging developers to write CTI applications using its Applications Programming Interface, API, which is a part of Windows 95.

Financial institutions, utilities, retail and travel organisations have up to now been the largest users of CTI applications. In the simplest form, they are used to route calls in customer service departments. ACD (Automatic Call Distribution) systems have been in use for 30 or more years to manage high volumes of incoming calls and route them to "agents".

CTI systems go one step further by linking to a database and "screen popping" the relevant information once the agent enters the caller's details. Calling Line Identification (CLI, provided by BT in the UK from November 1994) enables CTI systems to display details even before the agent answers.

Interactive Voice Response systems (IVR) now jeopardise the jobs of human operators whose only function is often to retail verbally the information shown on the screen. IVR systems cut out the human, so that the caller can talk directly to the database.

IVR is often PC-based or connected, and is most commonly used to deliver or accept information, such as placing an order, or delivering account-balance information.



National Savings Call Centre at Blackpool: the system allows staff to route calls rapidly – it also gives access to on-screen tables for rates of interest, allowing staff to swiftly work out complex calculations

CASE STUDY **National Savings Call Centre**

Treasury at cutting edge

For the National Savings, the UK Treasury savings body best known for its Premium Bonds, CTI offered a route towards its aim of 5 per cent efficiency improvements each year.

In spite of stiff competition in the savings market, the Treasury still expects National Savings to raise £2.5bn annually. To do this it has to sell between £8bn and £9bn worth of savings products annually.

"The savings market is highly competitive, with a rapid increase in the use of technology," says Peter Wassall, marketing services manager at National Savings. Ten other investment products are also handled at different locations, including Blackpool, Durham, Glasgow and London.

"Sales of Premium Bonds have shot up since the introduction of the £1m prize, and, surprisingly, since the National Lottery started," says Mr Wassall. "It's a product that has been going since 1956, but we have to move with the times. We're planning to introduce telesales to existing customers in 1996, and we have to be prepared. Contrary to some people's image of us, this is no dinosaur organisation, and this is one of the first CTI applications in the Civil Service."

In 1993 an efficiency study recommended an Automatic Call Distribution (ACD) system, and National Savings installed STS' Supercall 2000. The next step was an enquiry management system (EMS) to be installed at National Savings Blackpool to serve the Sales Information Unit. The specification for the pilot project centred on the products which generate the most enquiries: Premium Bonds, Income Bonds and Investment Accounts.

For this, STS joined forces with Envoy, an independent supplier of integrated call centre applications, and won the contract with an enquiry system based on the Oracle database. The resulting system not only allows allows staff to route the call correctly, but gives them instant access to on-screen tables of return for various rates of interest, allowing them to do complex calculations and deliver accurate information in response to customer queries.

Envoy developed the EMS system using Gupta's tools for client/server development, and Brock's sales and marketing package, both adapted for CTI applications. The system uses a PC-based local area network (LAN), with a server dedicated to the enquiry system, linked to the Supercall 2000 ACD via Envoy's TeleLink CTI software. It includes postcode look-up and access to the routines for on-screen valuation of Savings Certificates, based on the mainframe in Durham.

EMS can accommodate 24 operators, with plenty of room for expansion. Eventually the system will extend to include off-site independent financial advisers. Another plan is to use Calling Line Identification (CLI) to bring up a customer's previous history automatically.

CTI has brought a great culture change, but it is also providing the basis for a change of image for National Savings, currently gearing up for an advertising campaign using Freephone numbers and emphasising the easy availability of products by telephone.

"Not only have National Savings moved into the 20th century, we've leapfrogged into the 21st," says Mr Wassall.

Claire Gooding

■ **Call centres:** Boosting business efficiency. Report by **Claire Gooding**

New ways to handle customer services

Advanced call centres are now seen as a way of increasing competitive edge

The Arab National Bank system works in both English and Arabic, and has inbuilt "workflow" facilities to track each call

Not long ago, a query to many large service organisations regarding charges for gas, telephone or bank services meant hours of hanging on "for the right person" – an often fruitless, frustrating and expensive exercise. Today, however, a call to question service charges should bring an instant response, with the history of your account and your last contact displayed to an agent capable of dealing with a variety of topics.

Voice response systems take one further step in that they can put the customer in direct contact with the database. Such systems accept voice touch-tone input, and deliver voice-processed information in return. Recent advances in the ability to interpret and simulate speech open up new possibilities for human-computer interaction, such as British Telecom's Laureate computer-generated human voice system, which enables PCs to "talk back" electronic mail messages or precis of text.

An improvement in customer services is one of the direct benefits of recent advances in computer telephony integration (CTI) and voice technology. Organisations including banks, retailers, and utilities have all adopted the "call centre" as an efficient way of handling customer services.

They are efficient for the customer, but also for the organisation to the degree that they are seen as a vital part of being competitive. Many companies introduce CTI in an effort to cut staffing costs as a result of a business process re-engineering (BPR) initiative.

CTI systems have a great impact on staff, often cutting staff numbers and demanding that those remaining become multi-skilled. However, as the following three very different examples show, they also open up channels for customers and provide the potential to improve the relationship between customer and service organisation.

Bank's initiative

The Arab National Bank has grown from the eighth to the fourth largest bank in Saudi Arabia in the last three years, largely because of a growing range of products. These in turn have produced a rapid increase in queries and problem calls.

The bank's managing director and chief executive, Elie El Hadj, saw the potential of improving the Customer Services Centre, by integrating various different computers and systems in use in the CSC. His idea was to build on the bank's call centre technology, extending its existing call logging facilities to support call management and reporting, so that staff would not have to log on and off different systems to respond to queries.

None of the "shrink-wrapped" call-tracking PC-based products suited the bank and it approached Henley-based AIT, a specialist in call management for banks and building societies. AIT was able to build a working system in three months, using existing elements of the Bank's CSC, pulled together beneath easy-to use graphical screen information.

The new customer service system is the first of its sort in Saudi Arabia. Agents have access to a "customer folder" for each caller, providing information on all current products and services and a history of all requests, queries or complaints. The system works in both English and Arabic, and has inbuilt "workflow" facilities to track each call through the CSC.

A very different sort of "customer service" comes from a voice-processing system developed for the police. Members of the public in the UK, including postmen and milkmen, are increasingly encouraged to take part in "neighbourhood watch" and community policing schemes. However, dealing with routine enquiries and reports takes up valuable time, even for events that do not require police presence.

Police calls

In an effort to cut police administration and paperwork, Kingston Communications (the UK's only municipally-owned telecoms supplier) developed a system for members of the public to volunteer information over the phone to individ

Continued on page 33

■ **Accessing the Internet:** An update by **Geoffrey Wheelwright** in Vancouver

New option for 'Net surfers

Microsoft's strategic move could affect the on-line service community

Bill Gates, president of Microsoft, announcing the availability of MSN, the Microsoft Network, a global on-line service – integrated with the Internet – which enables customers to communicate and access a wide range of information and services from their personal computers

Software giant Microsoft Corporation's recently-launched computer on-line information service, the Microsoft Network (MSN) is more than just another entrant into that highly-competitive sector.

It is also part of a vital strategy by the company to position itself as the key provider of services and software to access the worldwide Internet computer network, its highly popular World Wide Web service, electronic mail functions and newsgroups.

MSN, combined with Internet access software which Microsoft is making available to users of its new Windows 95 operating system, now provides a way for users to access the Internet's electronic mail functions, the World Wide Web and other prominent Internet features.

Microsoft is cleverly using MSN and what it calls the Windows 95 'Internet Explorer' to make all kinds of Internet services directly from within Windows 95 and MSN, so that they appear to users to operate in the same way as Windows 95 itself.

While many other on-line service providers offer access to the Internet – and even the World Wide Web – Microsoft is hoping that this integration with Windows 95, and a number of key tools for helping users find their way around the Internet, will make a significant difference.

"You can find a lot of great stuff on the Internet, but making use of it on your own machine is sometimes difficult," explains Bill Miller, MSN director of marketing. Windows 95 users, "out on the Internet, expect it to operate the same way that the Microsoft Network works – and, in fact, it does," he says

According to Miller, tools for helping users find and use the information they want on the Internet – and elsewhere in the on-line world – are in heavy demand. "When you consider that more than 140 companies are participating in building unique content on the Microsoft network, and add that to the thousands of offerings that are available on the Internet, it can get pretty confusing to find things that make sense or are valuable to you," he says. That is why Microsoft is offering what it calls 'Guide Books' for MSN-users to help them quickly track down valuable information on both MSN and the Internet.

Access providers

The impact of all this on sections of the on-line service community could be quite dramatic, if Microsoft succeeds. At the very least, Microsoft could force many small Internet access providers – many of which simply provide local telephone access to the Internet for a monthly or annual fee – to look for ways to keep their customers.

Many Internet users will probably examine the option of accessing the Internet and the World Wide Web through the Microsoft Network as an attractive alternative to their current arrangements.

This could prove particularly attractive for users who travel widely. Microsoft has made MSN a global network from the day of its launch in August, providing local telephone access from most of the leading cities in the western world. This means that users will not only be able to access their electronic mail without incurring long-distance phone charges, but will also be able to use the World Wide Web from anywhere they happen to be on the same basis.

Users of the popular CompuServe information service can already do this, although they must use CompuServe's own "information manager" software if they are to receive best results from the product when using Windows 95.

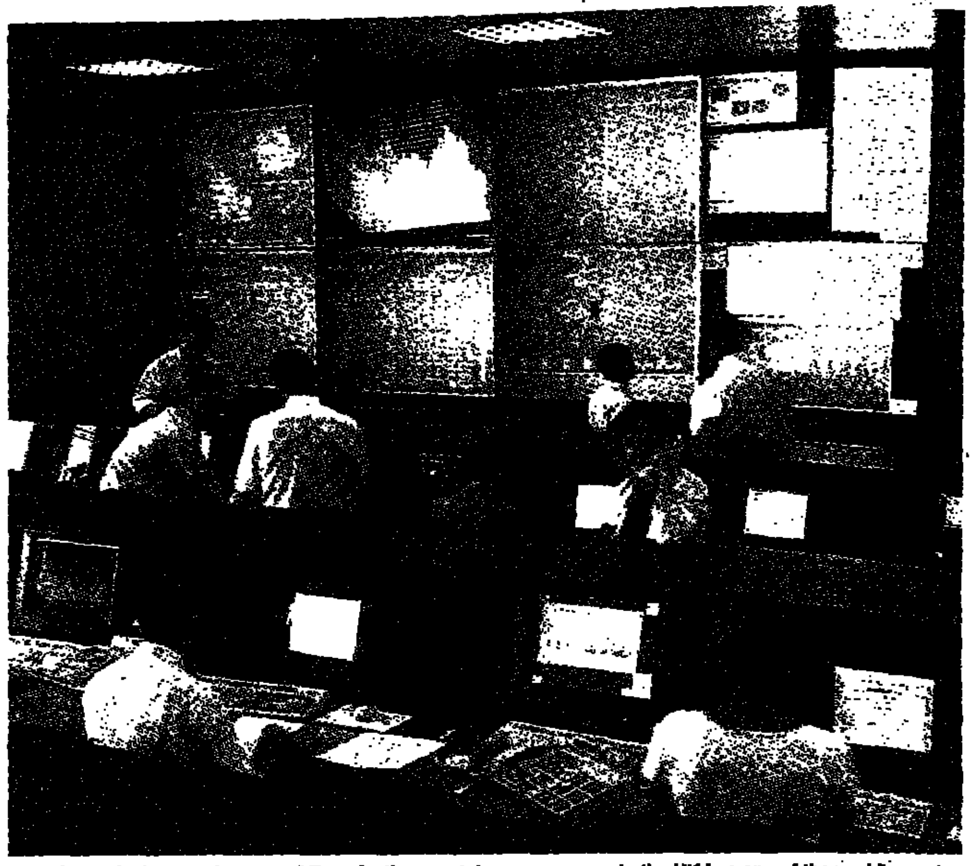
Microsoft is clearly hoping that the idea of being able to learn Windows 95 and then use those skills to navigate both MSN and the Internet (without having to learn a new application such as Compuserves Wincim access software) will give it a competitive edge.

To meet rising demand on the Internet, telecoms carriers are expanding and upgrading their networks: see report, page 22

■ **Keeping the system running:** Focus on a 'mission-critical' activity. Report by **John Williamson**

Network 'firefighters' win starring role

When networks are operating at speeds of billions of bits per second, fault detection and remedial action have to be fast



Round-the-clock control centre of Energis: the new telecom company in the UK has one of the world's most advanced networks, with a fibre optic system running along the National Grid's earthwire

Telecommunications operators used to consider the management of their networks largely as a fire-fighting activity: when the network went down, the idea was to find the fault and fix it as quickly as possible.

Today, telecom companies look at management in a completely different light. As well as keeping traffic flowing, tasks as diverse as the provision of new capacity, fraud prevention, the creation of advanced services, billing and reconciliation, and customer care are all grouped beneath the network management umbrella.

Many operators now see network management as a key strategic capability, and the introduction of improved operational support systems (OSSs) is considered vital to their future survival.

"Network management is an absolutely mission-critical activity," agrees Tom White, general manager of the Scotland-based Telecoms Systems Division of Hewlett Packard, one of the world's leading OSS vendors.

Network management's rise to prominence in the telephone company universe is due to a number of factors.

One of the most important is the privatisation of former national monopoly telecommunications operators in various parts of the world, and the liberalisation of markets which usually accompanies this change of ownership.

> Big operators have billions of dollars tied up in legacy systems

Privatisation makes telephone company management board answerable to shareholders, sometimes for the first time, and increases existing pressure to reduce operating costs.

The Canadian-headquartered telecommunications vendor, Nortel, has calculated that the maintenance overhead for the operators of public networks is equivalent to around 20 per cent of revenues.

The need to shrink overheads is particularly acute in countries where incumbent operators face competition for business from new, lower-cost market entrants. Many of the latter have parents in the highly competitive markets of North America where lean and mean is the order of the day: with an average annual maintenance spend of $40 per access line, US telecom companies – or 'telcos' –are nearly twice as cost-effective as operators in most other parts of the world.

In a deregulated environment, too, operators have to differentiate their services from the rest of the field, increase their service quality levels and respond more rapidly to changes in demand.

"Deregulation levels the playing field," says John Holdsworth, business unit manager for Network and Service Management Systems at Newbridge Networks. "Telcos can no longer afford to be cavalier about the actual quality of service they offer. Network and service management allows the telco to compete, survive and prosper."

A second consideration is that the service repertoire now being offered by operators is much more varied than previously.

"As telecoms becomes more competitive around the world, the kinds of services that are provided to end-user customers become much more varied," notes James Herbert, vice president of corporate affairs at US billing concern Moscom.

"There are many more options, and because of that the billing requirements become unique. We perceive that traditional OSS and billing solutions for cable television and telephone service, for example, are not compatible with one another although there is a desire for both types of operator to enter into the other's market."

A third explanation for the newly-elevated status of network management and OSS is related to the increased complexity of networks. This arises from the advanced nature of the technology being deployed, the ability of operators to construct networks with different elements sourced from different vendors, and the move away from managing individual pieces of equipment in isolation to the monitoring and control of both the network as a whole and the services that the network provides.

In short, it is no longer possible to manage a modern telecoms network on a manual basis.

Responding to market de-regulation, service proliferation and additional network complexity, the world's leading telecom operators are making big investments to upgrade their network management and related information technology (IT) systems.

According to IBM's Europe, Middle East and Africa Media and Telecoms Solutions Unit, worldwide IT spend for telecoms in 1994 was in the range of $30bn and the 1999 figure will be in the region of $50bn.

A common goal of operators is to replace their existing 'legacy' network management systems, which control individual network components, with new open systems providing integrated network-wide control. Unfortunately, this is not likely to be a painless or particularly rapid process.

In the first place, large operators have billions of dollars tied up in legacy systems and cannot afford to just write off their investments.

Secondly, although they do not provide overall control, legacy systems are often very good at managing their own particular piece of the network mosaic.

Thirdly, the equipment standards that are required for open management systems are still substantially incomplete.

In one sense, the advent of high speed broadband technologies makes the task of modernising telecoms management capabilities easier. Network management is often built into the standards for these new technologies from the outset, and there is little in the way of investment in legacy systems needing to be amortised.

> The intelligent 'agent' is a form of robot-like artificial intelligence

In another way, though, the shift to broadband just adds to an operator's management woes. Obviously, when networks are operating at speeds of billions of bits per second, fault detection and remedial action have to be fast.

In similar vein, according to Neil Rickard, European marketing manager for the US-headquartered StrataCom enterprise networking concern, many more parameters need to be monitored, analysed and interpreted in the broadband world.

Less obviously, perhaps, the ability of broadband technologies such as asynchronous transfer mode (ATM) to integrate different traffic types has implications for quality of service criteria since voice, data and video are effected in different ways by faults or degradations in the network.

Associated with this is the need to 'police' traffic so that, for example, a big data file transfer burst does not consume bandwidth that should be allocated to voice.

Some serious re-thinking will also have to be done to facilitate the management of video-on-demand (VOD) networks. For the first time, networks will have millions as opposed to hundreds of elements requiring to be monitored and controlled.

"This kind of network management really does not exist today," says Rob Faw, president and ceo of Westell International, a US-based company pioneering high capacity delivery systems for the copper access network.

One bright spot on the broadband network management horizon is continuing progress made towards commercialising 'intelligent agents'.

Robin Smith, manager of strategic developments in the intelligent systems unit of BT's Research Laboratories in the UK, defines intelligent agents in this context as robot-like software programs which have the ability to communicate, co-operate and negotiate with each other.

From this, springs an ability to control future networks of a power and complexity far beyond the means of current management systems. And, according to Smith, the intelligent agent is one form of artificial intelligence which is acceptable to humans because its origin is hidden from view – "it's a Trojan Horse, but a benign Trojan Horse," he says.

For reports on telecom outsourcing and other aspects of network management, see pages 19 and 39

■ **Personal communicators:** Suppliers prepare for a long haul, reports **Geoffrey Wheelwright**

Market slow to take off

A big challenge for suppliers is to create standards in a market where none has existed

They were unveiled in a flurry of public announcements exactly one year ago by a host of leading electronics and telecommunications companies, but so far all the "personal communicators" or telecommunciations-enabled personal digital assistants (PDAs) released by such manufacturers as Sony, Panasonic, Motorola and Sharp have failed to take off as high volume items.

California-based General Magic, whose Magic Cap operating system software is used to run many of these devices, is also facing challenges. In spite of a record-breaking public stock offering earlier this year, General Magic has been slow to ignite the development of software to work with computers written for the Magic Cap operating system and has delayed the release of a vital Microsoft Windows-based version of Magic Cap (to facilitate desktop wireless communications, as well as enhance connectivity to PDA devices) until the end of this year.

The company does appear, however, to be committed to staying for the long haul.

"To date, General Magic has generated minimal revenue from the sale of products and services based upon its technologies and does not expect to generate any significant revenues in 1995 and expects to incur substantial losses at least through the year ending December 31, 1996," said the company in its second quarter results statement.

And in its last quarterly earnings report, telecommunications giant and chip-maker Motorola reported that its wireless data communications efforts were not performing as well as anticipated.

"Growth has been rapid in the wireless communications arena, but global market penetration for devices such as pagers and cellular phones is still relatively low, at just above one per cent each," admitted Gary Tooker, vice chairman and chief executive officer.

Motorola is still pushing to change this fact, however, and at the end of July announced (through its Lexicus division) a handwriting recognition package for personal communicators using the General Magic operating system (including Motorola's own Envoy system).

Known as Lexicus QuickPrint, it allows users to enter handwritten notes on devices such as the handheld Envoy and turn them into typed messages that can be sent as electronic mail or stored as a phone number or Internet address.

Unlike some other handwriting recognition add-on systems for these devices, Lexicus pledges that will not have to learn a specialised alphabet or write in any specific style in order to QuickPrint.

The company says this software will learn upper-case, lower-case, cursive-style printing or any mixture of styles and claims that users will be able to "teach" the software to recognise their handwriting in less than 15 minutes.

While this may be useful, the big challenge for PDA hardware vendors, software developers and communications service providers is far more fundamental. It lies in trying to create standards in a market where none has existed – as well as in the basic task of just creating a market for the devices themselves.

While the idea of being able to send and receive messages in a wireless fashion on a device that tries to combine the convenience of a pager with the power of a personal computer's electronic mail system and a pocket computer's diary and scheduling functions, is attractive, it is neither an easy task to achieve nor one on which there seems to be widespread agreement about fundamental architectures and designs.

And until that happens, the growth of software and services for such devices (which has been the key to driving sales of portable personal computers) is likely to be small and largely supported by the companies already involved in the market.

■ **Value-added phone services:** New and better ways to handle calls. Report by Joia Shillingford

How to delay those unwanted calls

Small devices offer big benefits in office productivity, especially for teleworkers

Secretaries used to be the way of solving the problem of how to be 'in' to some people – and 'out' to others. But now, a small device from BT promises to do the same.

Called Caller Display 50, the device displays the number of the person calling so you can decide whether to pick up the call, or leave it for your answering machine/voice mail system.

This harmless-looking device, costing £49.99, can substantially increase productivity. Let us suppose you are working at home to get a report finished, but a relative – who is usually on the phone for around 20 minutes – calls. You can leave that call for the answering machine, but still pick up calls related to the report.

Caller Display 50 plugs into a standard phone jack-socket and measures about three inches by five. The plug on the end of the phone then slots into the caller display unit.

The unit stores the last 50 numbers. So, if someone leaves a message on your answering machine but forgets to leave their number – or does not say it clearly – you can look back and see what it was. You can also find out the numbers of people who called but did not leave a message.

Not all numbers are displayed, however. Exceptions include: numbers from some call boxes, which show up as Payphone; numbers which the caller withholds by pressing 141 before dialling, which show up as Number Withheld; calls made by using BT Chargecards; and calls made from phones which are not on the BT phone network (with some exceptions, for example calls from Orange mobile phones). International calls are displayed as 'International.'

So even when you do not know the number of the person who called, you will usually have the date and time of the call and some information about it. The only drawback is that you can only use caller display units on single lines, not on extensions to a company switchboard.

Caller Display costs £4 a quarter. In the US, Caller ID (the same as Caller Display) has really taken off in the last few quarters, probably due to increased marketing. It is growing by over 25 per cent a year – in some areas, even faster. In the UK, Caller Display has only been promoted in certain areas, such as London, but already has one per cent penetration. US penetration levels are between four and five per cent.

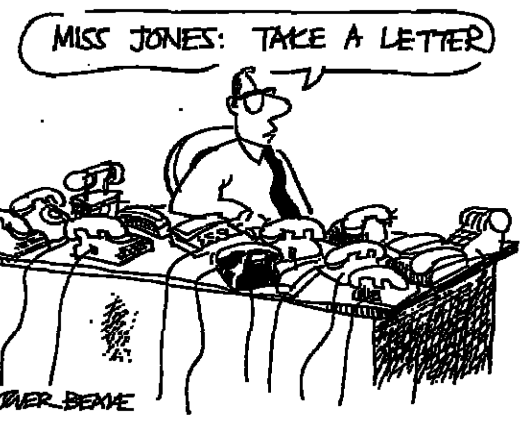
In the UK, those who do not want to invest in a caller display unit, or a phone with this feature built in (such as BT's £89.99 Relate 1000), can still take advantage of Call Return to find out the number of the last person who phoned. All you need to do is type 1471 and a computerised voice will give you their phone number.

Users report they they do not always recognise the numbers: one colleague stores all names and phone numbers in a sub-Filofax-sized computer called a Psion Organiser. Then, when he finds out the number of the last caller, he simply does a search on the phone number to find out who rang.

> The demand for 'call display' facilities is growing fast

Call Return and Caller Display are two of BT's Select Services (formerly called Star Services). Call Return was *introduced at the end of 1994* and 9.5m people now use it. The service attracts 4.8m 1471 calls a day (to a free phone number) – 3.8m more than *BT's initial forecast.*

Earlier this year, BT also introduced a voice mail service for residential customers – Call Minder. This works like an answering machine, except that it is part of the telephone network. The difficulty of integrating Call Minder technology into the network, particularly on the billing side, resulted in a six-month delay in introducing the service. But marketing began in April.



Unlike an answering machine, if someone calls you while you are already on the phone, Call Minder will take a message and then ring you as soon as you come off the previous call. At present, BT is running a free, three-month trial for any phone user connected to a BT digital exchange. When the trial is over, the service will cost £5 a quarter.

The company is also developing a range of messaging services for people who do not have their own telephone. It is already testing a voice mail-like service for these users.

Like most value-added services (VAS), voice mail is designed to increase use of the phone network. In some parts of Europe, 40 per cent of calls remain unanswered or are met by an engaged signal as opposed to only 10 per cent in the US. From the perspective *of a telecoms operator*, this means that the network is often used without a charge being made. Voice mail increases usage by increasing *the number of calls that are* answered first time. Other value-added services which can be used by anyone connected to a BT digital exchange include Call Barring and:

☐ Call Waiting. This lets you know if someone else is trying to get through to you when you are already on the phone.

☐ Call Diversion. This enables incoming calls to one number to be diverted to another. The recipient of the diverted call pays for the cost of diverting it.

☐ Three-Way Calling. This lets you talk to people on two other phone numbers: either both together; or privately, one at a time.

☐ Reminder Call. You can set your phone to ring at a pre-set time as a reminder.

☐ Charge Advice. If you preface the number you are calling with a few digits and follow it with a hash sign, you can receive an automatic notification of how much the call cost, once it is over.

Although many value-added services are extremely useful, especially for home-based workers (such as teleworkers), they involve typing in barely *memorable strings of numbers* and characters, such as star and hash. Three factors may increase take-up, however:

☐ First, the popularity of *mobile phones, which offer a* wide range of value-added services, such as voice mail. Once users become familiar with using such services on their *mobiles, they will be more* willing to try them on fixed phones. Mercury and Cable TV companies with phone services also offer a number of value-added services.

☐ Second, those who find 1471 useful may be willing to invest in screen-based phones, which show them not just the number of the last person who called but the 19 before that. These phones, which have a small liquid-crystal display, make it easier to use other Select services because they can be selected from a menu of options.

☐ Finally, a number of telecoms equipment suppliers are working on a second genera*tion of screen-based phones.* These will make it easier to use all sorts of interactive services from value-added phone services to home banking.

Craig Thomson, marketing manager for BT's Caller Display and Call Return, estimates that users with Caller Display spend 66p a month more on the phone than other users.

Caller Display has also helped to reduce malicious calls by 20 per cent and cut down the number of hoax calls to the emergency services.

"It's one example of how technology can work to the public good," says Thomson.

The writer, Joia Shillingford, is Associate Editor of the Financial Times newsletter, 'Business Computing Brief'

■ **Personal communication services:** Report by Tom Foremski

A rush to market

PCS technology could bring a revolution in communications

Personal communication services (PCS) is a wireless, digital technology operating *over a specific range of the* radio frequency spectrum. It offers cheap, reliable communications devices, linking telephones, pagers and computer devices.

US companies foresee a huge market in providing small wireless PCS-based phones that will be less expensive than cellular telephones. But the US rush to develop PCS-based products could result in a patchwork of incompatible standards and an early shake-out as companies tackle the considerable expense of building the PCS infrastructure.

Earlier this year, the US Federal Communications Commission (FCC) completed the auction of PCS radio frequencies, bringing a staggering $7.7bn (£4.81bn) in licensing fees as US companies and consortia tried to outbid each other.

Now the race is on to build the infrastructure for PCS services in what FCC chairman Reed Hundt has called "the greatest one-time private sector investment in any single industry in the nation's peace-time history".

Industry observers estimate $50bn will be required to build a nationwide PCS infrastructure. This will include installing at least 100,000 base stations which will pick up and route PCS transmissions. The PCS cell area is smaller than analog cellular phone areas, which means a higher density of base stations is required to carry transmissions.

In dense metropolitan areas, finding the space to place these base stations will be a problem. Many metropolitan areas also require special permits to build the base stations, a process that could take as much as *three years to negotiate.*

The purchasers of PCS licences are obliged to begin building the infrastructure as quickly as possible – an FCC requirement to prevent companies speculating and selling licences at a later date for a profit. Even without this FCC requirement, US firms are eager to begin producing a revenue from their large investments in PCS licences. It is this rush to market that looks certain to create a nationwide patchwork of incompatible PCS communications technologies that will limit the usefulness of PCS products. Users who travel around the country will not be able to use their PCS devices unless local providers adhere to the same standards.

The competition is between the Time Division Multiple Access (TDMA) standard and the Code Division Multiple Access (CDMA) standard. TDMA-based technologies, such as the European Global System for Mobile Communications (GSM), are available from many different telecoms equipment suppliers. CDMA is considered a superior technology, capable of supporting larger numbers of users on the same number of radio frequencies. However, CDMA telecommunications equipment is still under development.

Big question

The dilemma for US PCS providers is whether to rush into the market with readily available TDMA equipment, or to wait for CDMA and miss out on early market opportunities.

European suppliers of telecommunications equipment see a vast market in providing base stations and switching systems to US PCS providers. Companies such as Finland's Nokia and Sweden's LM Ericsson have already won contracts to provide a special version of GSM-based communications equipment.

CDMA offers a more efficient use of frequencies than TDMA, using a technique known as spread spectrum transmission and it is better at handing off calls between cell areas for users in moving vehicles. GSM supporters, however, say that GSM can be upgraded to similar capabilities offered by CDMA, through the use of new technologies that use advanced voice-coding techniques to raise the capacity of GSM based services. This approach *is likely to affect the voice* quality of conversations, however.

Market research firm Dataquest predicts CDMA will eventually prevail to become the industry standard by the year 2000. The battle lines between the technologies have been drawn but some companies, such as Motorola, plan to offer both GSM and CDMA equipment. Motorola believes there will be plenty of opportunities to provide the market with whichever technology it chooses.

The first PCS service is *likely to come from* Destineer, a subsidiary of Mobile Telecommunications Technologies. Destineer, along with partner Motorola, is building a *two-way paging service* using Motorola's Tango two-way pager.

This unit allows the user to receive text messages and reply almost instantly with pre-programmed messages such as: "I received your message and will call later," or "I'm tied up in a meeting." Tango will also offer a data port for downloading electronic mail messages. The service will use Motorola's Reflex high-speed transfer protocol.

Destineer has a head start in the PCS race because it received a "pioneer's preference" award from the FCC, allowing it to forge ahead with building the two-way PCS ser*vice even before the FCC auc*tion was completed.

As US firms gear up for PCS, it remains to be seen if the huge investments required will generate enough profits for all involved. Some industry observers predict that many PCS firms will fail because of the high cost of licences and the huge capital expenditures required to build the infrastructure. The FCC has made it more difficult for companies to succeed by making sure there is plenty of healthy competi*tion. In some metropolitan* areas, the FCC has licensed as many as four PCS competitors.

PCS companies must not only compete with each other but also with already entrenched cellular phone service companies which have a large base of customers.

Cellular phone technology could also turn into a formidable competitor to PCS. Critics of PCS say there is no guarantee PCS-based mobile phones will offer better audio quality, or that they will be smaller, *cheaper or have longer battery* life than cellular phones.

US PCS providers might succeed if they can find additional services to offer, rather than simply going after the telephone and pager markets. PCS could be used to handle computer data communications which might include transmission of multimedia files and even video-conferencing between mobile computer users.

Fresh boost for ISDN services

Continued from page 28:

in the form of showcases and demonstrations. As one example, Global 95 (November 28-30) will feature a series of events by operators and vendors spread over 50 locations aroound the world. Mercury refers to it as a 'virtual' event: more concocted than real.

At the TMA exhibition in Brighton, it will demonstrate applications such as videoconferencing, virtual networking, local area network (Lan) interconnection, integration of local and wide area networks and file transfer to other Global 95 sites in the US and Germany.

Mercury has its colours *nailed firmly to the mast of* Q.931, the European signalling standard that is now also being considered by a number of US operators. While the use of an *international* standard may not offer some of the features available from national signalling standards, it does ensure that there is compatibility between different operators, aiding the progress of international ISDN and speeding call set-up times. These are at around 3.5 seconds between the UK and US, according to Frank Jauncey, sales director of KNX.

Clive Curtis, Mercury's product manager for ISDN services, believes that the company's *adoption and introduction* of Q.931 signalling around 12 months ago has led to an *increase in international* primary rate traffic – "it significantly alters the use and pattern of use," he says.

It used to be the case that international primary rate ISDN predominantly consisted of switched voice calls since more than 98 per cent of ISDN connections were used to connect to a PBX or office switch, says Curtis.

As more and more PBX manufacturers incorporate Q.931 capability into their switches and as offices replace ageing switches, an increasing number of companies are using ISDN for data, says Curtis.

They can now opt for a primary rate ISDN connection *into their switch and can then* allocate four or six B channels for ISDN data use rather than opting for the much more expensive solution of equipping each desktop with two channels of basic rate ISDN.

While switch manufacturers are enabling users to split out basic rate channels from their primary rate connection into the switch, router manufacturers have also jumped onto the ISDN bandwagon. Once again, this is directly attributable to the introduction of Q.931, Curtis believes.

Previously, router vendors were unwilling to produce a number of different versions of a box in order to fit in with *national* variants of ISDN. Now they can see that there is a standard that will enable con-

ISDN links from the desktop: Alcatel Business System's 4400 PABX phone offers rapid and seamless voice and data services

nection to be made internationally, boxes have been developed that are effectively a terminal adapter and router rolled into one.

ISDN is thus being used for remote Lan access between small sites equipped with an ISDN 2 (basic rate) connection and head office.

Previously, head office would have needed a bank of termi*nal adapters and multiple* router ports; now they can use a single box with one primary rate ISDN connection and one lan connection. By replacing expensive router ports, the combined box approach offers a more cost-effective route, as *well as saving on space.*

Mercury believes that it can take some credit for driving developments on this front. As the first network operator to offer Q.931 on a national basis it has made available laboratory facilities at its Bracknell campus and provided vendors with access to its network.

"This gives them confidence that their equipment or application works and how it works," says Curtis. "We're kick-starting the market."

He adds that the next stage is to drive forward availability of the supplementary services defined for Q.931, such as advice of charge and international CLI (calling line identification).

This involves standardisation of ISUP, the part of the signalling from user to exchange and between different operators' exchanges. Mercury has a rollout programme on its international routes and aims to provide transparent connectivity within Europe and then on a global scale.

In the meantime, there is fairly limited implementation of ISDN used internationally. One example is GEC company, Avery Berkel, a manufacturer *of food processing and weigh*ing systems. For the past 12 months, the company has used basic rate ISDN between the UK and Germany, replacing the KiloStream line used previously.

Avery Berkel is about to *implement primary rate* ISDN to connect up its UK manufacturing headquarters with PC networks in its four other European sales and service sites for the transfer of information such as drawing specifications.

"It's a demanding application because we're linking whole networks together," says IT manager Mike Coulson. Use of ISDN has provided savings of around £4,000 per quarter on that one line, he adds. The link is used solely for data transfer, not for voice.

Users who send data over an ISDN link have to put an extra '0' into the inital address string, differentiating data *from non-data traffic.* This ensures that their data is sent over an international link on which no compression is applied, thereby reducing the likelihood of corruption of their data during transmission.

Operators also benefit from the ability to differentiate between switched voice and non-voice traffic. While voice traffic is sent at one standard international tariff, "tariffing is different for international 64k calls," says Curtis. "It's charged as a premium rate *international* call".

For applications such as video-conferencing, the charge might seem fair enough, but for data, users may find the premium rate charge harder to stomach. Yet another disincentive for using ISDN, perhaps.

Speedy response to calls

Continued from page 31

ual officers. South Yorkshire Police pioneered the system in 1993, providing a direct link between its 2,800 beat officers and callers. An officer attending an incident *gives out a* card containing his number, and witnesses can dial into the mailbox to leave information that is retrievable 24 hours a day. For example, a "Dodgy Drivers Day", inviting people to report untaxed *or unsafe* vehicles, proved highly effective, with calls flooding in long after the specified day.

"It has eased pressure on our *switchboard* by diverting thousands of non-urgent calls every month to the appropriate beat officer," says Alan Clarke, then telephone manager at South Yorkshire Police. "Some people prefer to leave a message on voice mail because they don't feel as though they are being interrogated."

In *Leicestershire*, the system has been put to use to deliver sergeants' and inspectors' briefings remotely, and the force is considering the use of Police Messenger as a bulletin board to cover traffic reports: *for example, road closures* when there is a pop festival at Donnington Park.

The Kingston Police Messenger won a top award at the Telecommunications Industry Association, in September 1994, partly because of the enthusiasm of the public. A public opinion poll proved its popularity: "Better communications are important, especially for the police, and this is a good investment if it frees up the 999 number and means that messages reach the right person," said one interviewee.

Airline inquiries

For the airline Virgin Atlantic, speedy response to customers is so important that it is currently overhauling its entire global network to cope with the rapid growth: the number of PC users at Virgin has rocketed from 50 to 1,500 in the last four years.

Virgin Atlantic is already using a variety of technologies – call control, voice processing, and interactive voice response – in its everyday dealings with customers. Among other global projects, Simon Keene, Virgin's Systems and networks manager, is currently looking at worldwide CTI applications for Virgin Atlantic – "the key benefit is the integration," he says. "We *have several customer data*bases which hold information on reservations, customer relations, and Virgin's Freeway daily frequent flyer programme. They are currently not integrated into our call centre and voice management systems, but we are aiming to improve the service, making it easier for customers to talk to us direct. We need to speed up the transaction, and that means a better service."

Freeway handles thousands of calls daily. The new system will still rely on human operators, but all the customer details will appear immediately because all the database searching will be done before the agent answers, using Calling Line Identification and CTI database techniques.

"We are looking at integrating our internal voice network and computer network. It's a vast area, with many business benefits internally, such as users being able to check voice mail and get messages wherever they are," adds Mr Keene.

Virgin already uses an automatic call distribution system for reservations and customer *relations*, and for Virgin Freeway, the frequent-flyer club. Other internal departments are also hooked in to the ACD system.

ISR - international simple resale: Margins are coming under pressure, reports **John Williamson**

Bigger savings for users

Cost-cuts of up to 30 per cent are available on some telecommunication services, claim ISR operators

"Less is more" was one of the guiding principles of pioneering skyscraper architect Ludwig Mies van der Rohe. For the architects of telecoms international simple resale (ISR), the belief is that more is both less . . . and more.

In recent years, ISR has been seized on by the governments of a number of countries as a mechanism for reducing what are perceived to be excessive prices paid for international telecom services. The basic notion is that the licensing of more service providers will mean lower residential and corporate telephone bills, which in turn will stimulate more traffic. "It's an alternative to offering full international facilities and enables competition to flourish on certain routes," says Vince Affleck, a specialist on network competition at the UK's Oftel.

The ISR pitch is a fairly straightforward one. Customers access the ISR operator's network over the dial-up public switched telephone network (PSTN) or, if traffic warrants it, over private circuits. International circuits leased by the ISR concern then carry the calls to designated countries, where they "break out" once again into the PSTN for delivery to their final destinations.

The ISR operator makes its money by hiring bulk capacity from full facilities operators such as BT and Mercury, dividing and marking it up, then selling it on to users at rates below those charged by the national telecom companies for normal international direct dial (IDD) calls. End-user savings of the order of 30 per cent are claimed by some ISR operators for some routes.

The UK is a global pioneer in the ISR game. As far back as 1990, the then director-general of Oftel, the UK's telecoms regulator, Professor Bryan Carsberg, proposed ISR as a means of putting pressure on dominant UK carrier BT to lower its overseas charges.

In September 1992, ACC Long Distance UK became the first ISR carrier licensed in the UK. Due to the difficulty of agreeing interconnect terms with BT – a circumstance which ACC's director of legal and regulatory affairs, Michael Taylor, put down to the ground-breaking nature of the situation – ACC only began services in early 1994.

ACC has since made up for lost time. By August of this year, ACC's PSTN access service was carrying 15m billable minutes of telephone traffic each month. In July, some 4,000 new business and residential customers joined the ACCess 1601 scheme, pushing the company's revenues to over £1m a month.

"Our policy is simple. ACCess 1601 tariffs are much lower than traditional alternatives and there is no membership fee,"says ACC marketing director Jerry Morris.

ACC is not alone. According to Oftel figures, there were 16 ISR operators licensed in the UK by late August, with several other applications in the pipeline. At that time there were six ISR routes from the UK – to Australia, Canada, Finland, New Zealand, Sweden and the US.

Perhaps surprisingly in view of the threat to its revenues, BT said it welcomes ISR. The former monopoly may not just be trying to make public virtue out of an imposed necessity: the dent made in BT's profits by ISR is as yet very small. More important, BT is understood to have actively pushed for the introduction of ISR on the North American route to get its $4.3bn Concert joint venture with the second largest US carrier, MCI, on the road.

ISR is a significant component in Concert, a business which provides end-to-end managed network and outsourced services to the world's largest multinational and international corporations. In June 1995, on the first anniversary of its establishment, Concert's owners said the enterprise had signed up some 2,000 customers and had notched up contracts valued at approximately $700m. Further than this, as a spokesman for the UK's Department of Trade and Industry (DTI) points out, the full facilities carriers still get part of the ISR sale, and the circuit capacity involved may otherwise have sat idle.

But not everything in the ISR garden is rosy.

In the first place, there is a limited number of routes on which ISR is licensed. In practice, the DTI only gives the go-ahead for ISR to destinations where telecom market competition is judged to be as well developed as in the UK.

"Essentially, what we look for is to establish ISR between regulatory regimes which are liberal enough to allow UK companies the equivalent freedom to provide services," says a DTI spokesman. "There has to be market transparency and market access."

> ISR is often a key component of telecoms liberalisation

Although the DTI is looking at additional destinations, some see lack of universal connectivity as a serious flaw in the ISR case.

"When you look at the traffic patterns of the sort of companies that would be interested in the ISR routes, they also have a large amount of traffic on other routes," says Guy Stacpoole, until recently the head of business telecoms at UK cable operator Telecential. "If you're able to offer competition and competitive prices on all of the other routes as well, the very small advantage the ISR people have on their chosen routes is not sufficient to move the business their way."

Secondly, according to BT, pure ISR operators do not have anything like the network redundancy of the full facility carriers, and users may encounter congestion with some operators. Last, but certainly not least, ISR margins are coming under pressure as IDD prices fall and the gap between the cost of IDD and leased lines narrows. "There's a window at the moment, but how long it will stay open remains to be seen," says BT.

Using technology to squeeze more calls on to a line is a possible response by ISR operators, but there may be a quality penalty. "The critical pricing element for resellers is the cost of renting bandwidth, so they may be forced into tighter voice compression to increase capacity," says the *Telecommunications and Media Review* published this year by law firm Baker & McKenzie and the Deloitte Touche Tohmatsu International consultancy. "This would offer a lower grade of service for bargain-hunting customers."

Not all ISR operators appear to be equal, however. "ISR has a low end and a high end," says Mr Taylor. "Effectively, operators at the low end are engaged purely in arbitrage across facilities-based providers' tariffs. Although obviously very keen to price ourselves competitively against BT and Mercury, we also have our own switching facilities and a proprietary state-of-the art billing system. We're able to provide services over and above what other ISRs can offer."

ACC also rejects the idea that the present shortage of licensed routes is an impediment to doing business. "While only a small number of countries are designated, we deliver calls to those countries and then hub out on the PSTN. There is no destination in the world to which we can't deliver," says Mr Taylor. In this case, the argument is that the ISR operator is still able to offer competitive rates because, unlike BT and Mercury, it does not have to pay the normal correspondent settlement charges to an overseas carrier for the international conveyance of calls.

ISR is a key component of telecoms liberalisation in a number of countries. Where the relevant authorities sanction equal access, allowing customers to designate an international carrier at the outset rather than dial one up on a call-by-call basis, the prospects for this form of competition look particularly bright.

The writer is senior technology editor, Global Telephony Magazine.

Virtual private networks: Top companies are switching to VPNs, writes **John Williamson**

Big benefits for business

Lower telecom costs and consolidated management lure the corporate sector

A recent survey carried out by the UK's Ovum consultancy confirmed what many people in the telecommunications industry have suspected for some time: business enterprises are switching more of their traffic on to virtual private networks (VPNs).

Interviewing members of the European Telecommunications User Panel (ETUP) – a body made up of 100 senior telecommunications executives representing blue chip multinational corporations in the region – Ovum found that more than 50 per cent either already use VPNs or have plans to do so by the end of this year.

Interestingly, of ETUP members with falling expenditure on dial-up public switched telephone network (PSTN) services, 50 per cent said their VPN budgets were increasing and 45 per cent said their spend on leased circuits was increasing.

In turn, of those with decreasing leased circuit budgets, 46 per cent said VPN investment was increasing.

In practice, VPN is not a very precise term – "a VPN can have different building blocks," explains Peter Hamelberg, director of standards and international affairs at Dutch national carrier Koninklijke PTT Nederland.

"You could use PABXs and leased lines at one extreme. You could just use public switching and not anything private at the other. There are all sorts of variations in between."

In general, though, VPNs can have two distinct aspects. One is that elements of the public network are allocated by operators for the private use of business enterprises. The second is that the VPN is "seamless", with operators providing a homogeneous repertoire of services at each location and a single point of responsibility for provisioning, installation, service and billing. This last is of particular relevance to users operating internationally or globally.

Related to the seamless VPN is the idea of outsourcing. This involves telecommunications companies or specialist service providers taking over the construction and day-to-day operation of a user's network and the systems which support it.

Given that this type of customer is likely to have worldwide telecommunications requirements, and that no one telecom operator can provide a full service in all locations, the outsourcing business is proceeding through so-called "supercarrier" alliances.

A number of advantages are claimed for VPNs. Lower cost is the most important in the view of Ian Wright, marketing director for France Télécom Network Services. By consolidating traffic, users are able to benefit from discounts which are offered by many telecoms companies.

At the same time, VPNs which are charged for on a usage basis are a more economic proposition than fixed-cost private networks if lines are used only intermittently.

Among blue-chip multinational companies, more than 50 per cent either already use virtual private networks or have plans to do this year. Pictured here is a control room of MFS Communications. In the US, the company operates a full carrier services in more than 40 cities

Added to cost savings, says Udhay Mathialagan, group manager for international products at Australian carrier Telstra, are consolidated management and the ability to manage networks in different countries. Other VPN benefits result from the fact that telecoms companies' infrastructures are already in place, new technology and upgrades are the responsibility of the VPN operator, and billing can be arranged in different currencies and in various locations.

Typical VPN service components are network-wide private numbering plans, transparent transport of PBX signalling across the network, heterogeneous PBX interfacing, cellular network access, interfacing to private networks, mechanisms to handle traffic overflows, and call screening capabilities.

Corporate voice traffic is usually the first candidate for VPN treatment. According to Clare McCarthy, co-author of the Ovum report *VPN Services: Market Strategies*, just published, this is because there are good deals to be had for voice, but it is often still cheaper to run data over private networks.

As you might expect, VPNs have some potential drawbacks, too. One is that security and user control may be less than in private networks. Another is that technology, telecoms regulation and the economics of delivery are changing so quickly that long-term VPN contracts may be disadvantageous to the user. A third is that international VPN operators generally cannot provide all the routes an enterprise might conceivably require.

Also, international VPNs (IVPNs) have not always been able to deliver the goods in terms of universal service features, management capabilities and flexible billing options. "IVPNs' inability to meet all of these requirements on a global scale has been hampered by several factors, mainly related to the fact that various operators have to co-operate in order to provide a global IVPN platform," observes Wright. "This involves linking different network architectures, different billing systems and operating across different regulatory environments. The effectiveness of an IVPN solution will be dependent upon the operators and geographic areas involved, as well as the site density of the user in any specific country."

An answer may be Global VPN (GVPN) services furnished by joint ventures and alliances of operators with complementary skills and points of presence in multiple countries.

A partial list of these supercarrier alliances includes the embryonic $4bn Phoenix consortium of France Télécom, Deutsche Telekom and Sprint of the US; the Cable & Wireless federation; the tandem Uniworld alliance uniting the Unisource group of the national Dutch, Swedish, Swiss and Spanish telecom companies and the WorldPartners consortium involving AT&T and several leading Asia-Pacific telecommunications carriers; the Stentor consortium of Canadian carriers; and the $4.3bn partnership between BT and the second-largest US long distance carrier MCI.

The last claims to be 12 months ahead of the supercarrier competition. By June of this year Concert had built a network comprising some 6,000 nodes in 800 cities across the world. However, says Ovum, the Anglo-American alliance will need an Asia Pacific partner if it is to be one of the globally dominant players.

As well as GVPN services, super-carriers are offering to take over the running of corporate networks. Network outsourcing in this way is claimed to save business enterprises up to 20 per cent of their telecommunications expenditure and, perhaps more importantly, allows enterprises to concentrate on their core business activities. "Companies such as Rank Xerox, for example, clearly need telephones and telecoms to make their whole businesses function, but they're not telecommunications suppliers," says Mr McCarthy.

Some telecom operators see the construction and operation of global supercarrier networks as critical to their survival in the medium term, and many observers forecast that as few as five such telecom company partnerships will dominate the entire GVPN and outsourcing business in the next century.

Other trend watchers believe that supercarrier alliances face an uphill struggle in building credibility with users and in assembling a service repertoire which will have mass appeal. Mr Mathialagan takes a pragmatic view: "It's not about building billion-dollar networks. It's about rolling up your sleeves and getting services for customers in countries where they want them."

The author is senior technology editor, Global Telephony Magazine.

Billing: Telecom suppliers seek to upgrade their accounting systems, reports **Philip Manchester**

No simple solutions

Global telecoms, digital 'cash' and the information superhighway promise to make billing even more complex

Utility companies are forced to compete in distinctly odd ways. The regional electricity companies in Britain, for example, are now rushing to upgrade their accounting systems. They need to meet the new demands of competition which will follow the complete de-regulation of the industry in the next couple of years.

While they will not be able to compete on the efficient delivery of electricity to the consumer, they will be able to compete effectively by reducing their administration overheads. This will allow them to charge consumers less for processing their bills.

The telecommunications industry is in a similar situation. It, too, can gain a competitive edge by finding ways to reduce the cost of billing its customers. Billing telecommunications users has always been complex and difficult.

The average telephone user, for example, wants itemised bills broken down into minute detail – at a cost to the supplier which can sometimes exceed the value of the bill.

The arrival of global communications, digital 'cash' and the information superhighway promises to make billing even more complex – "when you step into the global telecommunications arena you can be required to bill anywhere in the world, in many different currencies and under many different tax regimes," says Mr Michael Storey, of international telecommunications supplier MFS. "We have had to invest in a global billing system of our own because you just can't buy it off the shelf.

"We are making do with a package solution for the time being. But by the end of next year we will have our own billing system in place." he adds.

Mr Storey admits that the company sees the opportunity as a way to gain competitive edge – particularly over established telecoms suppliers.

"Almost all of them have emerged from a national domestic marketplace. My impression is that the more established ones have invested in so much infrastructure that it is too costly and time-consuming to change.

"They have acknowledged the need and are moving slowly and cautiously. But global telecommunications is a different world. You need a billing system which can respond to customers needs – you could call it a billing support process. If it is good enough, it differentiates you from the competition," he explains.

Some financial customers want detailed bills, right down to individual traders' desks. They want detail by function, by geographical area and by country, he says.

"On top of that you have to overlay 30 or 40 currencies and 30 or 40 different tax regimes. Some specify that they want the bill sent, say, to New York and summary reports elsewhere."

Not all telecom suppliers see the emergence of international services causing billing and administration problems, however. Mr Pat Sutton, online capabilities manager at UK telecoms supplier Mercury Communications, suggests that it could even be easier to bill for on-line services than for standard telephone calls.

"The nature of on-line services is that most people access the network locally. They incur local call charges and the rest is billed through the Internet. One thing that telecommunications companies are good at is billing for small amounts," he says.

Mr Sutton goes on to describe several different approaches to billing for online services: "Premium rate services are already well catered for and there are new services based on credit card account numbers emerging on the Internet. On top of that

> International companies seek detailed bills involving up to 40 currencies

you can set up subscription services or even use the new digital cash services, such as Mondex - although that is not really relevant to online services."

Mr Sutton dismisses worries about security – despite a recent successful attempt to break the security on Internet financial transactions. An incident in August, when a researcher at the French National Institute of Computer Science and Control (INRIA) broke into the Internet security system, raised concerns about security.

"A lot of security is about perception – after all, every code can be broken. The INRIA incident only involved breaking a single code and needed massive computer resources to do it," says Mr Sutton.

Lack of security for financial transactions is one of the most common reservations expressed by companies when they contemplate commercial use of the network.

But in the long term it is unlikely to act as a disincentive. One possible solution is that the problem will become someone else's responsibility.

Mr Steve West of the giant US software company, EDS, sees the emergence of a new specialist who can take over the administrative problems of networking – "we call them infomediaries – specialists who broker information and handle the problems associated with billing and administration," he says.

"We are already seeing some of these in the form of Compuserve and American Online. The publishers of the *Official Airline Guide* are another example. All they do is collect information and distribute it."

Mr West sees a growing number of "infomediaries" working on the network – although in the long term he expects only a few to survive.

"First of all, we will see a lot of these. Then we will see them collapse into each other. And down the road there will probably be only three or four large ones."

Mr Storey of MFS accepts that the competitive edge offered by efficient billing will not last forever: "In a few years' time, everyone will have effective billing. But until then we will guard our billing systems closely once we have them installed. We don't want to give away our edge."

No doubt other telecommunications suppliers will adopt a similar approach. The advantage for customers, of course, is that efficient billing systems will help in some small way to cut the costs of using the telephone system.

Data networks: Focus on 'global event management.' By Martin Banks

Downtime can spell disaster

One US network management system has the ability to monitor 'anything we can get a pulse from'

Whether dealing with national and international telecommunications networks, or a small local area data network within a single company, the biggest problem to be faced is network management.

The most technically complex and functionally rich network is of little value if it fails to work. It is even more of a problem, particularly for users, if the cause of a fault cannot be identified, located and fixed in the shortest possible time. This can be a significant problem even with small networks using equipment and services from a single supplier, but that is rarely the reality for the majority of users.

Company data networks are invariably constructed from a variety of products and services, all from different suppliers. There can be mainframe-based legacy systems, a variety of flavours of Unix, plus Novell's NetWare or IBM's OS/2 for the local departmental traffic. For telecommunications providers, the problems are even bigger.

AT&T, for example, claims to have the biggest network in the world. Voice traffic alone uses 450,000 active telephone stations, 24,000 trunks and 560 Private Branch Exchanges.

Associated with this network are seven data centres, 225 host computers, 350 servers, 450 routers and some 150,000 logical devices.

As with the company data networks, each of these systems will normally have its own management tools and methods for informing operators of problems. This usually means a separate display terminal for each system, highlighting fault conditions. Operators, therefore, often have the information they need, but in such a complex and dislocated form as to be of limited management value.

Solutions to this problem are available from many systems providers, particularly companies such as IBM, Hewlett-Packard, Sun and Novell, but the general trend is for them to provide systems management services from within their own offerings, and only if other systems can interface to their management services.

Within the suppliers of company data networks, industry observers tend to agree that Hewlett-Packard's OpenView provides the most comprehensive service. But even with data networks, there is usually a need to monitor and manage a wider range of systems and services than covered by the offerings of the computer companies.

Today's complex networks are a far cry from the early days of telecoms: this historic line-drawing illustrates the moment that first intelligible words spoken over the telephone at Exeter Place, Boston, on March 10, 1876. The words were: "Mr Watson, come here . . ." Drawing courtesy of BT Archives, London

Integrated solution

A US-based company, MAXM Systems Corporation, of McLean, Virginia (with UK offices in Godalming, Surrey) claims to have developed a solution to this problem of managing complex, heterogeneous networks, with its MAX/Enterprise system. This is said to provide 'global event management', and it is the company's boast that, so long as the event can be measured electronically, the system can integrate its monitoring and management into a single event management structure.

For managers of company data networks, the system can provide a single management display that integrates events from any number of incompatible information systems. This is regardless of whether the system in question uses proprietary protocols to communicate those events, or standard open protocols such as Simple Network Management Protocol (SNMP). The same service can be supplied to telecoms network managers working with many different varieties of routers, switches and trunks. The system provides the tools for managers to grade the priority of any 'event', so that they know which are the most important and demand immediate action.

At AT&T, for example, all events are called 'alarms', yet an alarm can range from a problem with a single handset through to a significant portion of the network failing.

These extremes obviously have different priorities in maintaining the overall service level to users, and in an organisation which estimates it has over 900,000 'alarms' a week, it is an essential management function to know the difference as soon as possible.

The MAX/Enterprise system is already being used by many leading network users, from AT&T through to large financial and business organisations. It is in the business sector that the company hopes to make its biggest inroads. According to its president, Jack Reis, the system's ability to monitor and manage 'anything we can get a pulse from' extends its use beyond conventional data network management.

The company has already implemented systems that integrate the monitoring of large-scale refrigeration equipment into a network management environment, and sees a significant market potential in similarly integrating such business-critical processes as manufacturing, production and storage, to create more complex and comprehensive business information management systems.

Network management report: see page 19; network outsourcing: see page 39

Desktop video-conferencing: The market will quadruple this year, reports Tom Foremski

Fresh ways to create a shared work environment

Computer makers are planning to introduce PC models already equipped with a digital camera, microphone, and video-conferencing software

Unusual venue: in a former Victorian church in Marlow, Buckinghamshire – now the offices for Roger Staton Associates, a UK marketing and PR consultancy – dial-up video-conferencing is a routine way of communicating with clients in the UK, the US and Scandinavia. Typical costs, using ISDN digital telephone lines, are around £12 for a one-hour call in the UK and £60 for a similar call to the US

A combination of new technologies and greater availability of digital telephone lines is making it easier and cheaper to provide video-conferencing on personal computers. It is a development that could potentially change the way people conduct business, educate themselves, and how they communicate.

Desktop video-conferencing, however, goes beyond turning a personal computer into a video telephone. It essentially creates a shared work environment that encourages collaborative efforts between individuals separated by geography and time zones.

The greater availability of Integrated Services Digital Network (ISDN) lines, a move toward common technical standards, and the development of inexpensive software-based video-conferencing applications, are all helping to fuel a rapidly growing market. The US market research company, Personal Technology Research estimates the worldwide market for PC-based video-conferencing systems will quadruple in 1995 to reach \$120.4m (£75.2m). By 1998, this global market could be worth \$2.1bn.

With expectations of tapping into these markets, PC makers are planning to introduce PC models already equipped with a digital camera, microphone, and video-conferencing software. It is the first stage in a trend that is likely to lead to video-conferencing becoming a standard feature on desktop PCs and even some portable computers.

Apple Computer, IBM, Dell Computer, Compaq Computer, Canon Computer Systems and Zenith Data are among manufacturers which have demonstrated PC models with built-in video-conferencing capabilities, designed to work with ISDN lines.

US telecommunications companies such as AT&T see video-conferencing generating new business and customers. Almost 60 per cent of AT&T's ISDN lines are used for video-conferencing, and the emergence of inexpensive desktop video-conferencing systems should spur demand for ISDN lines.

The biggest breakthrough for video-conferencing systems has been the development of software-only applications. Normally, users need to buy add-on hardware and software, which can cost as much as \$2,000 per user. Intel has been leading the low end of the market with its ProShare videoconferencing systems for as little as \$900 per user.

Late last year, Intel introduced its Native Signal Processing (NSP) technology which makes use of the high performance of Intel's top-end microprocessors to handle video and audio processing tasks usually dealt with by digital signal processing (DSP) chips. It demonstrated a software-only version of ProShare using the NSP technology to transmit a video-conference call between chip engineers.

"With native signal processing, we can make use of the unused performance of the microprocessor for other tasks," said Intel CEO Andrew Grove at the launch of NSP.

According to Mr Grove, a personal computer is rarely required to perform at its peak capacity, which means the microprocessor could be used to handle additional tasks such as video-conferencing.

But there are some concerns that even powerful microprocessors such as Intel's Pentium do not have the capacity to handle computer intensive communications tasks.

> The new video conferencing trend spurs demand for ISDN lines

Some critics of NSP, mostly DSP manufacturers, say there is little point in using Pentium microprocessors which cost several hundred dollars each to perform a task that can be easily handled by a DSP chip costing about \$10.

Despite problems with establishing NSP as an industry standard, Intel's focus on developing a software-only version of its ProShare videoconferencing product shows the direction other vendors must take. US firm Vivo Software is another company that has developed a software based videoconferencing system for Windows PC users.

An agreement on communications standards is helping the market. The Intel-led Personal Conferencing Working Group, a consortium of desktop video-conferencing companies, earlier this year agreed to support the International Telecommunications Union's H.320 and T.120 standards within the next version of their Personal Conferencing Specification. This represents a significant step forward for desktop video-conferencing, since users of Intel's ProShare product could previously only communicate with other ProShare users.

New US laws that seek to limit car pollution in metropolitan areas are another incentive for companies to try video-conferencing as part of telecommuting programs. This trend also helps to feed demand for ISDN lines.

While PC-based video-conferencing systems are the fastest-growing sector of the market, traditional room-sized and roll-about systems are also thriving. US market research firm Dataquest says the limitations of desktop video-conferencing systems are driving demand for larger room and roll-about systems. The larger systems can handle group meetings.

"Group conferencing systems have been the true beneficiary of all the desktop video-conferencing hype of the last two years," said Bruce Ryon, senior analyst at Dataquest.

"Business-users are telling us that the true need for conferencing systems, group-to-group meetings, is served by the best technology available, room and roll-about video-conferencing systems."

Individual and group video-conferencing systems all suffer from a fundamental problem: how to convey the subtle video and audio clues that are present, mostly in the periphery, during face-to-face meetings.

For example, PC-based video-conferencing systems produce relatively small images of people on the computer display and the video quality is often jerky and of low resolution. This makes it difficult to maintain normal eye contact between conversing parties. In addition, camera angles can distort people's faces, further complicating the conversation.

Scientists at AT&T Bell Labs have come up with a prototype liquid crystal computer display that hides a digital camera directly behind the display. This provides a more natural image than that obtained from a camera mounted on the side of a computer display.

Japan's telecommunications giant, NTT, is experimenting with a "virtual room" concept which attempts to mimic a real group meeting. A prototype system has been built that uses a 50-inch display to show multiple images of the participants. The system creates an effect that shows participants to the left and right sides of the viewer, just like at a large conference table.

These types of developments should help to improve the quality and the experience of video-conferencing systems and also to build demand for more telecommunications services.

FT Review of Information Technology: The November issue

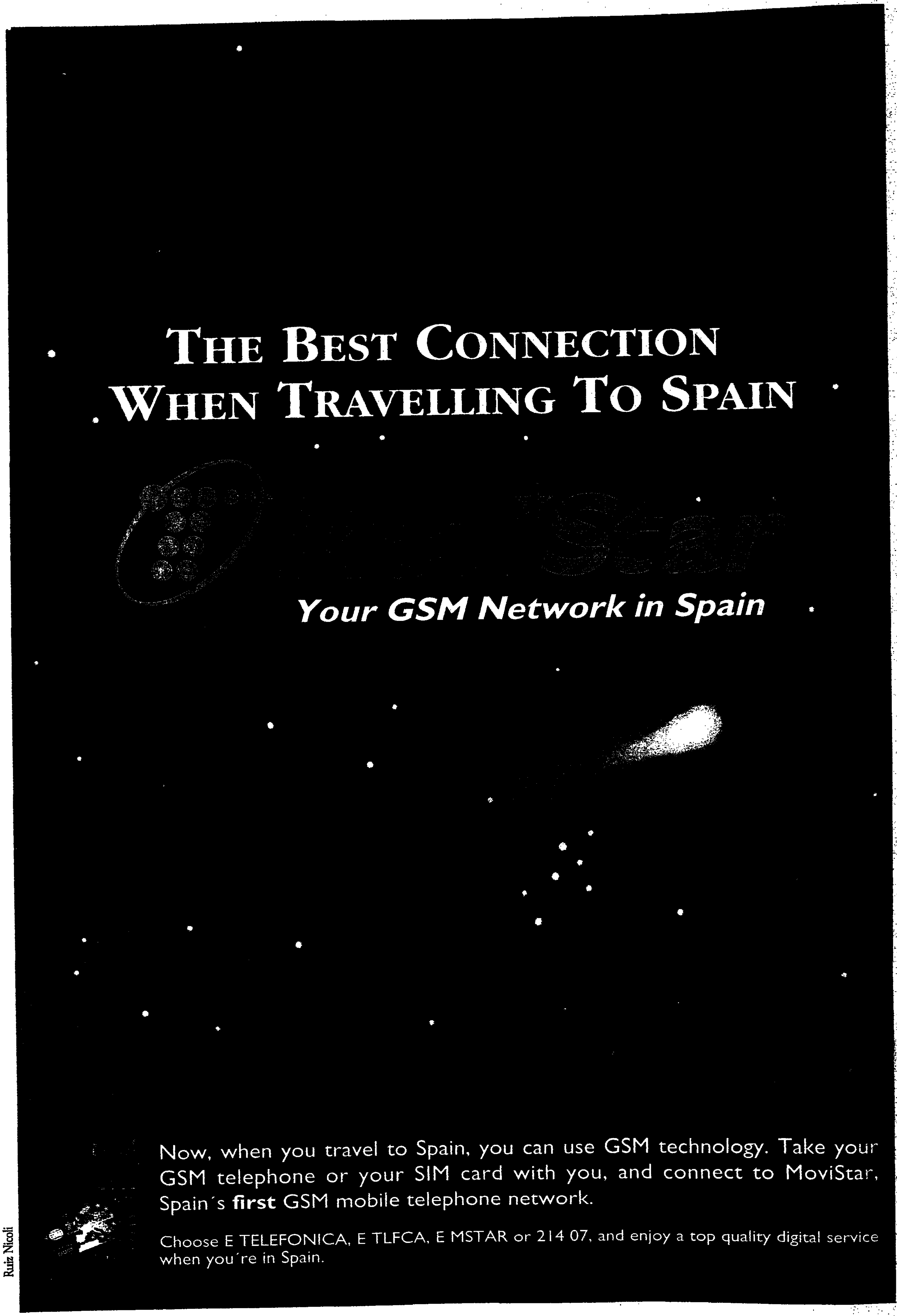
Technology in the office

The October issue of the FT Review of Information Technology appears tomorrow, Wednesday, October 4.

The main theme of the following issue on Wednesday, November 1, will be Technology in the Office. It will also include an extended 'Directions' section on document management systems and image processing. The 'Software at Work' theme in November will highlight new sales and marketing systems.

Topics planned for later issues of the monthly IT Review include the following:

☐ December issue: IT in the Home; plus features on accounting software packages and intelligent systems.
☐ In January, 1996, there will be an A-Z Guide to the Internet
☐ In February, 1996, the main theme of the IT Review will be IT in Government.
☐ In March, the focus will be information and communications technology.
☐ For an editorial synopsis, plus details regarding advertising, contact:
☐ In London - Simon Larter and Dolly Cochrane, telephone +44 (0)171 873 4129; fax +44 (0)171 873 3662.
☐ In the US: call Gavin Bishop, FT New York on (212) 745 1342.
☐ In San Francisco, call Nick Mayle (415) 637 9775.
☐ Details are also available by writing to: Financial Times, Number One, Southwark Bridge, London SE1 9HL.



هكذا من الأصل

Beaming satellite links over France: an uplink site on the roof of BT's Eurocentre in Paris, serving 750 insurance agents across France

■ **Mobile satellite services**

Consortia look to the stars in a multi-billion dollar race

The market could be worth around $500m in 2000, rising to $2bn by 2005, say analysts

The race to create the first satellite hand-held mobile telephone service is gathering pace as the funds to put the multi-billion dollar systems into operation are coming through.

THe high cost of implementing the systems, which will provide cellular phone and data communications between any two places in the world at competitive prices, has not deterred a wide variety of aerospace, satellite, equipment manufacturers and telecommunication groups.

Not surprisingly, however, the massive price tag has prompted the formation of consortia to spread the costs and to speed development.

Development costs vary greatly, ranging from $1.5bn to $6.5bn for the different services among the five consortia which have emerged with firm plans to establish satellite systems. Two of the consortia say they will be ready to launch within the next three years.

The race is lent extra excitement by the belief among many analysts that a hand-held mobile satellite service is only financially viable for a maximum of two or three operators. "This is the year we see at least two of the fledglings fall by the wayside," said a senior executive of one consortium.

How big is the potential market? The world mobile telecoms market is today worth in the region of $3.2bn (£2bn), according to ABN Amro Hoare Govett, and the broking house estimates it could be worth $6.5bn in 10 years' time. It suggests the mobile satellite market could be worth around $500m in 2000, rising to $2bn by 2005.

Mobile telephone calls can already be made via satellite, but the costs of both calls and equipment are prohibitive. Equally importantly, the equipment needed has to be stored in a large suitcase.

Integration with existing services

The new satellite mobile market would involve using a normal-sized telephone – although early indications are that it will be slightly larger than today's mobiles – which would be fully integrated with existing fixed and cellular services. Rates would be more expensive than current international rates, but two of the satellite consortia are forecasting international call rates of under $3 a minute.

As with the advent of conventional mobile services, business users will be the first to be targeted for the new service.

The five leading consortia are:

- Globalstar – a venture between US groups Loral, Qualcomm, Ellipsat, Constellation Communications and American Mobile Satellite Corporation;
- Odyssey – a partnership between US aerospace group TRW, with Teleglobe of Canada;
- Iridium – a consortium led by Motorola of the US; and
- Inmarsat-P – the only European venture funded by 38 members of the Inmarsat marine satellite consortium.

All are at various stages of raising finance. Iridium has raised $1.6bn and is on the verge of raising an additional $1.8bn in the bond market. The consortium has opted for a low earth orbit system, the so-called "Leo" system, involving the placing of as many as 60 satellites in orbit below 10,000km above the earth.

While this is the cheapest method for installing the hardware required, the satellites have a shorter life and require more maintenance. Analysts estimate a low earth orbit system could require an additional $3bn in replacements and other costs after five years. However, Iridium's supporters say that low earth orbit provides greater flexibility, takes advantage of new technology and gives more accurate coverage.

Systems operable by 1998

Globalstar has also chosen a Leo system, although its constellation will be based on 48 satellites. Both Globalstar and Iridium plan to have their systems operable by 1998.

Inmarsat-P and Odyssey have both chosen medium orbit systems for their services. The European venture has raised $1.4bn from its contributing members, with a further $1.2bn likely to be required to get the system off the ground. Inmarsat has recently signed a $1.3bn contract with Hughes Space and Communications for the 12 satellites its system will require.

Hughes is likely to take a share in the consortium as part of the deal. An announcement is expected shortly.

A measure of the competition – and nervousness – among the five consortia involved in the development of the service was the startling move by Odyssey consortium leader TRW to protect its proposed satellite configuration by patent. The attempt to "patent space" made headlines on both sides of the Atlantic and brought the debate over the system to the fore.

TRW claimed its constellation was unique and attempted to claim a patent on all low earth satellite configurations. Although the patent was withdrawn at the last moment, the company did eventually gain a patent for a majority of the claims it made in its original application. However, it fell short of excluding other companies, such as Inmarsat from using a similar orbit.

Patrick McDougal, vice-president of business development and external relations at Inmarsat-P, said the TRW patent would not affect the European group's plans. "We've looked very carefully at it and the only similarity between the two systems is the service they aim to provide." He pointed to substantial differences between the two systems, such as in the number of satellites, the frequency band, and the use of digital technology.

Despite its claim to success, Odyssey still has to secure external funding for its development.

As the leading consortia get closer to a launch date, the issue of financing will take on a greater emphasis for those still seeking funds. "The first ones in the air will steal a huge march on the competition," said John Lewis, telecoms analyst at Hoare Govett.

Analysts also believe that after the war in space, the next battlefield will be among equipment manufacturers, with telephone manufacturers striving to make the most portable and compatible telephones at competitive prices.

Christopher Price

■ **Satellite communications:** Inmarsat aims for global coverage for all its services, reports **Julia King**

Prices fall as competition increases

There will be more than 1m personal mobile satellite customers by 2000 and several million early next century

Hand-held satellite mobile phones may be the next big battle in space, but they are unlikely to go into widespread commercial service before the turn of the century. In the meantime, there is a window of opportunity for satellite systems such as those from Inmarsat, which already provides worldwide coverage.

Inmarsat is the international organisation owned by its member-companies which pioneered maritime satellite communications in the early 1980s. Inmarsat can make global satellite connections anywhere today, but calls cost up to $10 a minute and the equipment to make and receive them fills a large suitcase and costs about $25,000.

The aim of a global satellite phone service is to be able to make calls from mobile phones no larger than today's cellular handsets at a cost of $3 a minute or less.

Meanwhile, Inmarsat aims to provide global coverage from all its services on all of its systems, an aim which is apparently unmatched by any of its competitors in the area of satellite communications, most of whom are just beginning to provide services that are predominantly regional.

To those who complain that communications using satellites represents an expensive proposition, the counter argument is that it is cheaper than wiring up a whole region. It also avoids the problems that some communications companies have encountered in rural areas.

Copper that is put into the ground in certain developing countries is often immediately removed by the local inhabitants for re-use in some project deemed more important, or is resold for much-needed income.

Tim Herring, general manager of Inmarsat's land mobile division, adds that in countries where users are accustomed to paying charges of $3-4 per minute using phone cards, Inmarsat's charges do not represent such a daunting proposition. The charges seem higher to those coming from countries whose telecommunications regime is liberalised and competition has driven down prices.

Prices are falling all the time, according to Herring – and competition is welcomed by Inmarsat, since it will help to drive growth of the market overall. The latest terminal to be launched, the microCOM-M phone from Magellan Systems, costs just under $8,000 and calls are billed at $4.25 per minute using a pre-paid 'smart card' from OGM Communications. Magellan Systems has diversified out of its normal field of positioning and navigation products using GPS, the Global Positioning System few yachtsmen would now be without.

As well as attracting low call charges, the terminal also represents a breakthrough in terms of size. It weighs 2.5 kilogrammes and is A4 size, making it the same size as the laptop computer carried by most executives.

As the name suggests, the terminal is designed for use with the Inmarsat-M service and can be used for maritime or terrestrial applications. It can also be used for making voice, fax or data calls.

Inmarsat's expertise and business lies predominantly in the maritime area. Merchant shipping represents the single largest area for the organisation, according to Herring, and more than 50 per cent of its 55,000 terminals are devoted to maritime use.

However, the number of terminals is growing by between 2 and 2.5 per cent per month, says Herring, indicating the increasing demand for satellite communications. The number of users of the services is said to be increasing by more than 1,000 each month.

The old and the new: in Hanoi, Vietnam, a satellite dish is fixed prominently near a traditional hairdressing business Picture by Sarah Murray

A small number of signatories, through whom customers obtain service over the Inmarsat network, now offer global coverage.

As a result, customers no longer need to sign-on with different signatories and arrange billing with separate authorities as they change regions. Where terminals are to be used solely within one region, this obviously does not represent an issue, but it does offer the potential for truly mobile use.

For mobile users, there is also a global carphone service using Inmarsat-M. Currently, voice and fax services are available; data is expected to be added by the end of the year. The benefit of the service is that it is available even in regions not yet covered by cellular technology. Once again, call charges are said to be between $4 and $6 per minute.

Carphone products are available from O'Gara Satellite Networks, IN-Snec and STN Atlas Elektronik with GEC Marconi, Hagenuk and Ball Aerospace also planning to launch products.

Inmarsat expects that aid agencies will be one sector to use the carphone; the agencies are already heavy users of Inmarsat products. The latest versions are quick and easy to set up, restoring communications immediately to an area hit by natural disaster which has severed all other links. Examples include the recent Caribbean hurricane zones and the Kobe earthquake in Japan.

In the light of pressing need for communications in such situations, Inmarsat has recently amended its policy on waiving charges for its space segment in the event of natural disaster. Its FreeSpace policy is now intended to provide aid on a more frequent and equitable basis.

The request for free space segment use needs to come from the Signatory of the stricken country.

Ease of use is vital when products are to be set up by relief workers with no communications skill or training.

Products have now evolved to the point at which workers need to do little more than to ensure that they are pointing at a satellite. Nevertheless, training is still an important part of ensuring the successful implementation of satellite-based products.

Other regular users of satellite communications are peacekeeping forces in regions such as Bosnia and trucking companies. Many of the latter, according to Tim Herring, will now only send their drivers into remote regions in which levels of crime are high if the cabs are equipped with satellite communications facilities.

The trucking companies have discovered that drivers are less likely to be attacked if they are seen to have communications facilities on-board; communications are also vital for helping in the case of break down.

A report commissioned recently by ACEA, the Association of European Automobile Builders, predicts that satellite communications will form an increasingly important element in development of the trucking industry over the next ten years.

As well as providing much needed emergency cover, satcoms helps with better fleet management. For example, drivers out on the road can be advised of a detour that they are required to make in order to pick up a last minute consignment for their return journey, so that trucks return full, not empty.

Safety is also a crucial factor in products developed for the maritime marketplace, where Inmarsat products comply with the recommendations of the International Maritime Organisation for Safety of Life at Sea (Solas). Terminals can be used for sending distress calls automatically in addition to providing their users with more standard communications facilities.

New satellites being put up into space by Inmarsat will make use of spot beams: focussing on the areas of the world in which demand for communications is highest.

As a result, the satellites are more efficient. Because communication with the satellite is easier, both amplifiers for boosting the signal and antennas for receiving signals can be smaller and lighter.

One result of this has been the development of products developed specifically for use in short and medium haul aircraft. The Aero-I system will enable passengers on these aircraft to make and receive voice, data and fax calls just as those on long haul aircraft have been able to do for the last two years. The system will cost between $50,000 and $100,000 in comparison with the $250,000 to $350,000 needed for one of its predecessors.

Next year will see the launch of a one-way pocket-sized messaging device that will receive messages anywhere that is in view of a satellite. The device resembles a pager and will be able to receive messages of up to 128 characters. Herring expects the unit to cost between $5-600.

Satellite communications may not represent a cheap option, but if the need for communication is great enough and there is no alternative, pricing appears more reasonable.

"We understand that we're always on the fringe," says Herring. "As infrastructure is installed, we move further out."

■ **Cable telecommunications:** More than a million cable phone lines have now been installed in the UK. **Raymond Snoddy** reports

Network for a future electronic superhighway

Restrictions on cable television carrying telecom services should be lifted as quickly as possible, says the European Union

Cable telecommunications in the UK has just reached an historic milestone. By the end of July, a total of more than 1m cable telephone lines had been installed, nine-tenths of them residential, and cable telephone services are now an important mainstay of the industry (see table, right). More significant, by installing a total of 1.033m telephone lines, cable telephony was only fractionally behind the 1.044m total for cable television subscribers. The rate of increase of cable telephone installation is so steep – a year ago the total number of lines installed was only 461,000 – it is certain that the number of cable telephone subscribers has already passed the number of television subscribers.

Deregulation of the telephone industry in the UK has gone deeper than almost anywhere else although allowing cable companies to compete with traditional telecommunications operators, particularly with the advent of multimedia services is likely to become commonplace over the next few years.

Already 82 cable franchises are offering telephony and it is now virtually unthinkable in the UK that cable operators should merely offer extra channels of television without at the same time providing telephone services to compete with BT, the dominant telecommunications group.

In less than five years the nature of the cable business has transformed itself dramatically in Britain. The change was been symbolically marked when the industry trade organisation changed its name from the Cable Television Association to the Cable Communications Association.

For the industry telephony is a very attractive business. It provides a second stream of revenue that many in the industry believe will ultimately overshadow revenues from television. Some, such as General Cable, pioneers in providing cable telecommunications services, go even further and argue that there are now three distinct streams of revenue from the cable business – television, residential and business telephony.

UK cable operators reach one million target – twice

Two milestones reached in the UK: the broadband cable industry has reached 1m cable television subscribers and 1m telephone lines have been installed, according to latest figures from the Independent Television Commission

	July 1995	April 1995	July 1994
Number of operating franchises	92	86	69
Broadband homes passed	4,668,200	4,494,241	3,336,075
Broadband homes connected	1,044,290	963,132	707,707
Subs as % of TV homes	4.66%	4.26%	3.17%
Average penetration	21.0%	21.4%	21.2%
Pay/basic ratio	148%	151%	144%
Franchises providing telephony	82	75	48
Telephone lines installed	1,033,723	872,573	461,032
– of which residential	934,511	789,315	413,080
– of which business	99,212	83,258	47,952
All cable homes passed	5,562,513	5,165,095	4,178,910
All cable homes connected	1,185,553	1,109,771	871,409
Average penetration	21.3%	21.4%	20.9%

Note: Pay/basic ratio is a measure of the number of subscriptions to the pay channels (Sky Movies, The Movie Channel, Sky Sports and Home Video Channel), as a percentage of total subscribers. Source: ITC, London, September 1995

For General Cable, business customers have been averaging 5.5 lines each, and in the six months to the end of June business line generated an average of £1,087 a year. This was down from £1,293 in the previous six months, partly because of taking on lower revenue business and partly because of growing competition in the marketplace as BT starts to fight back hard against its growing cable rival.

Apart from generating higher revenues than cable television subscriptions cable telephones generally achieve higher penetration levels – the ratio of those subscribing to those who could – than television. At Nynex CableComms, a subsidiary of the large New York and New England telephone company, which is the second largest cable operator in the UK, the television penetration rate is 18.8 per cent but the telecommunications subscriber rate is 22.4 per cent.

Mr Karel Van Miert, the European Union competition commissioner, says: "We cannot yet predict exactly what will happen with multimedia and convergence. All we know is that networks must be developed and competition must be introduced and protected"

The better performance on telephones has been boosted by Nynex promising that its average residential customert will save 25 per cent over BT standard prices for line rental and call charges combined, before discounts and promotions.

Another plus for the cable operator is that telephone customers seem to show greater loyalty than television subscribers and 'churn' – the industry jargon for those who end their subscriptions – is markedly lower.

BT has, however, been responding with special deals of its own and it is likely that growing competition in telecommunications as new entrants arrive will increase pressure on the profit margins cable operators can can earn from telephony.

As convergence between entertainment, telecoms and computers continues cable operators across Europe hope they will soon be free to offer both telecoms and multimedia.

Directive

Mr Karel Van Miert, the European Union competition commissioner, believes that the current restrictions on cable television carrying telecom services should be lifted as soon as possible.

Lifting what he believes are outdated restrictions is the main point behind a European Commission draft directive on cable networks.

The aim of the draft directive is to ensure that preparations should get under way next year for cable networks across the European Union to be able to carry public voice telephony from 1998.

"We cannot yet predict exactly what will happen with multimedia and convergence. All we know is that networks must be developed and competition must be introduced and protected," Mr Van Miert told the European Cable Communications Association in May.

In the UK, one stumbling block to the further spread of cable telephony has been "number portability." At the moment, any consumer wanting to change to cable telephony has to change their telephone number. For small busineses, in particular, this has been a barrier.

The cable industry has won the argument with Oftel, the telecommunications regulator, but there then followed a squabble between the cable industry and BT about who should pay for the necessary software changes. The issue was referred to the Monopolies and Mergers Commission which is expected to come up with a compromise next month.

In return for full number portability, the cable companies are likely to have to pay a one-off fee plus a continuing proportion of future revenues.

For the cable companies, full number portability, is of course a double-edged sword. Customer-traffic would in future find it much easier to flow back to BT again without the inconvenience of a second number change.

But despite such tactical matters, all the signs are that cable telephony will continue to be of vital importance for the cable industry and that it will fund the creation of networks that will eventually create multimedia capacity. As a result, at least in some urban parts of the UK, something approaching the electronic superhighway might turn out to be more than a pipedream.

Creating an international telecom gateway: Bell Cablemedia, one of the UK's leading cable companies, has announced a pioneering alliance with Teleglobe International (UK), a subsidiary of the Canadian intercontinental telecoms carrier (turnover C$1.5bn). Bell Cablemedia, which has 2.1 equity homes nation-wide, will provide Teleglobe with interconnection and switching services for overseas traffic. The agreement aims to give "significant cost reductions" for carriers and customers. This alliance is Teleglobe's first commercial venture in the UK cable market.

■ **A continent in transition:** Some governments seem determined to control information flow, and for them the telecommunication revolution is a threat, reports **Michael Holman** in Nairobi

Wary welcome for telecom breakthroughs

The biggest prize will be the project that links African states to each other – and links the continent to the world more efficiently than at present

In Africa, a telecommunications revolution is under way – potentially as profound in its implications as anything that has happened since the end of colonial rule, nearly forty years ago.

From Lagos to Lusaka, Africans are breaking the stranglehold on information maintained by many of their governments. Ready-access to the outside world through the tools of new information technology is beginning to provide news and data that would been unthinkable a generation ago. And although only a comparative handful of Africans so far have the facilities required on a continent where telecommunications services are generally poor, political and economic debate has been greatly stimulated.

Computer "notice boards" allow exiled opposition groups to put their case to an international audience, and academics exchange information by electronic mail (e-mail) or Internet on World Bank and International Monetary Fund policies in Africa.

The availability of a variety of sources not only of news about the world, but information about the countries they live in, has become a catalyst in Africa's difficult transition from authoritarian regimes to multi-party democracies.

Already, Africa's expanding telecommunications market is worth some $1.5bn a year and rising rapidly. It is a market that, despite the difficulties of doing business in Africa, isattracting the world's top companies in the sector, including Siemens of Germany; France Télécom; Sweden's Telia International and Swefund International; Cable & Wireless and Vodafone (both UK); Switzerland's Clovergem; and Motorola and AT&T of the US.

Barely a month goes by without a new country or regional project coming on to the market. But the biggest prize will be the project that links African states to each other, and links the continent to the world more efficiently than it is today. At least two multibillion dollar proposals are on the continent's development agenda, designed to close the gap in communications between Africa and the rest of the world. According to the Geneva-based International Telecommunications Union (ITU), sub-Saharan Africa with around 500m people has only 3.5m phone lines.

The fact that 12 per cent of the world's population has only 2 per cent of the world's main telephone lines is a striking statistic in itself. But the figure conceals even more striking evidence of weakness.

An estimated 60 per cent of Africa's telephone lines are concentrated in South Africa. The picture is even worse outside the town and cities. Some 70 per cent of Africa's population live in the rural areas, served by only 228,000 lines.

The obstacles to development of the sector, say officials of the Pan-Africa Telecommunications Union, include foreign exchange shortages, and the difficulty of keeping pace with demand that comes from a population increasing by more than three per cent a year.

Sub-Saharan Africa's 500m people have only 3.5m telephone lines. Around 70 per cent of Africa's population live in rural areas, served by only 228,000 lines. Pictured here are homes in the Bester Stettlement, Inanda, north of Durban. Picture by Ashley Ashwood

Add to these factors Africa's post-independence record of disasters – man-made and natural – which have severely damaged the infrastructure of the continent, and the problems facing the sector are formidable. Yet, instead of enthusiastically welcoming the technological breakthroughs of recent years, many African governments have misgivings.

Notwithstanding the growth of democracy in Africa over the past few years, most governments seem determined to control information flow, and for them the telecommunication revolution is a threat. Left to their own devices, such governments would be dragging their feet. As it is, they are under increasing pressure from abroad.

Central to the economic reform programme urged on Africa by the World Bank and the IMF, is privatisation of state-owned corporations, including the telecommunication companies.

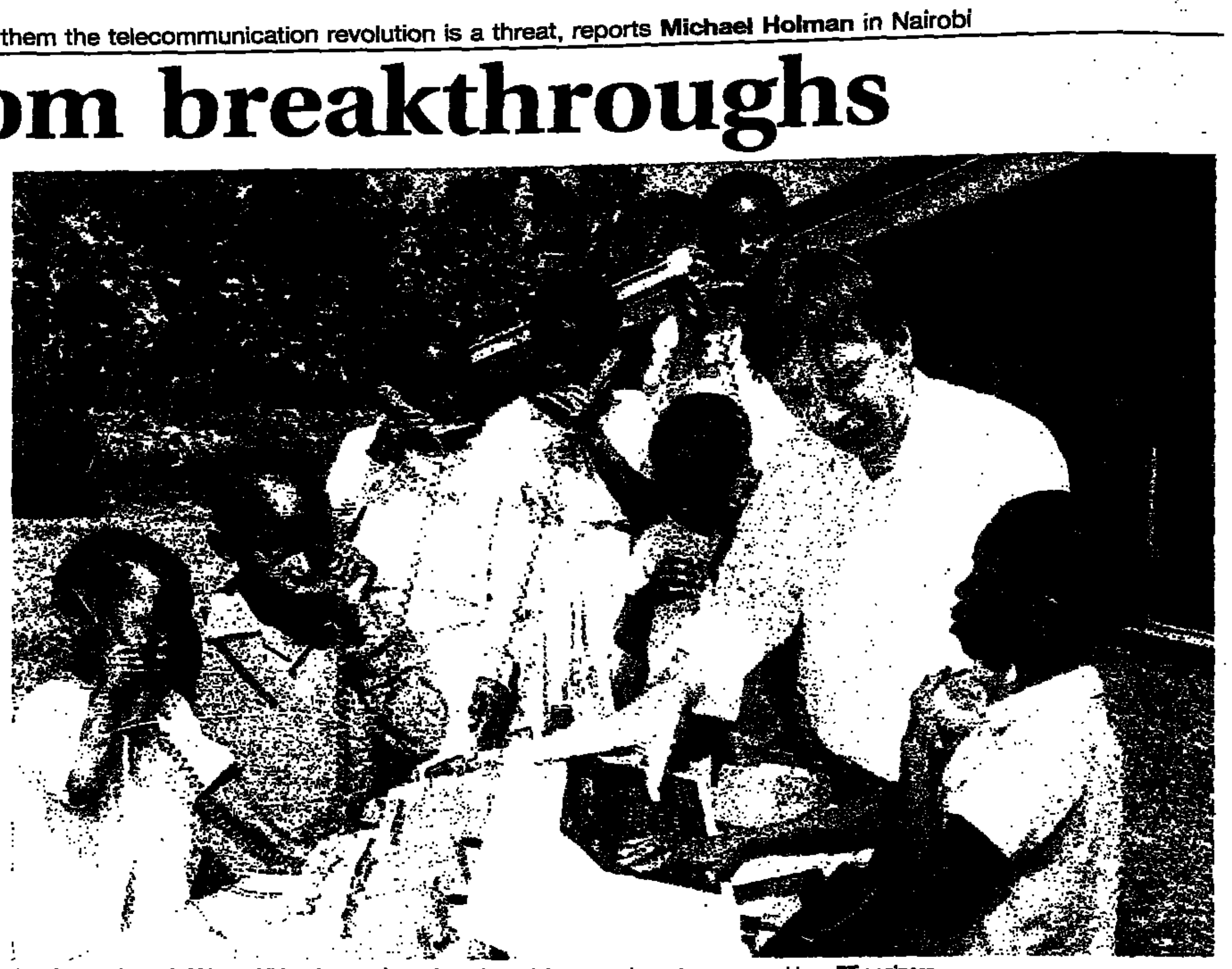
Placing the sector in private hands will be a step forward, but there is a further hurdle to be overcome – the lack of co-operation between countries and regions in Africa over a co-ordinated strategy for the continent.

There is little evidence that the telecommunications sector will prove an exception to a dismal record. Despite having some 200 organisations intended to promote regional co-operation, intra-African trade is stagnant, and regional bodies such as Ecowas have largely failed.

Plans to set up the continent's own satellite broadcasting site under the auspices of the OAU, for example, are being held up by rivalry between Egypt and Ivory Coast over the location.

Yet, the consequences of delay in initiating and co-ordinating what has to be a continent wide telecommunications programme are far-reaching.

"If we fail to put more effort and resources into catching up, and exploiting the new opportunities, we will lose the battle against under-development" warns a Lagos banker.



'Testing, testing . . .': African children in a rural area try out new telecom equipment, encouraged by a BT engineer

The warning is echoed in a recent appraisal of the continent's access to Internet and other international data systems, in a report called *Networking in Africa*, by Jean-Yves Djamen and Dunia Stephane.

Only six countries – South Africa, Zambia, Egypt, Tunisia, Algeria and Mozambique – have full Internet connectivity, although around two dozen nations have limited access.

Internet's African subscribers total only 27,000 out of 50m worldwide, and although growing fast, the figure needs to be higher if Africa is to make best use of this 'network of networks'.

"The global village is a reality. African countries cannot afford to progress on the basis of a closed world assumption," say the report's authors.

"If the present state of network communications in Africa persist, then the gap between rich and poor countries will grow even wider," the study emphasises.

"It would be disastrous if Africa does not hook-up now... we will be left out of the whole globalisation process," says Mike Jensen of Sangonet, a southern African based non-government organisation which promotes the case for expanding Africa's access.

> Africa's telecom market is already worth $1.5bn a year and rising rapidly

Whether these warnings spur governments currently considering several projects on the grand scale needed to improve communications remains to be seen.

Options before them include:

■ Africa One – proposed by AT&T, based on a 30,000-mile underwater fibre optic cable, which would link 41 African countries, as well as link in to networks in Italy and Saudi Arabia, funded through a mix of private and public sources.

Initially, the scheme would concentrate on coastal centres, then develop regional networks and finally link in to the global information system.

"It will make an excellent, cost-effective way for them to connect from country to country," according to Glenda Jones, Africa managing director of AT&T Submarine Systems.

■ Afrilink: Siemens has put forward an alternative plan in which the continent would be linked by 310-miles of underwater cable hops.

■ Atlantis-2: a proposal to lay submarine fibre-optic cables between Brazil, Senegal, Spain and Portugal. This plan comes under an accord signed by Senegal, Benin, Cape Verde, Gambia, Guinea, Mauritania and Togo, with France Télécom, Brazil's Embratel, Marconi Portugal, Spain's Telefonica and Argentina's Telintar.

■ Afrinetwork, in which NTT International Corp, a subsidiary of Nippon Telegraph and Telephone, would play a leading role.

There is no indication, however, that Africa is close to reaching the consensus required to implement the most suitable of these schemes. But the longer the delay, the greater will be the adverse impact on Africa's efforts to overcome underdevelopment.

As Djeman and Stephane put it in their report: "Haves and have-nots of the next century will be defined by their degree of access to information."

■ **South Africa:** *Five million new lines are needed in the next five years, reports* **Roger Matthews**

New society calls for change

There is a search for balance between the needs of business, and the state's social and political goals

South Africa is debating the future of its telecommunications industry in much the same, open way as it is approaching a wide range of other basic issues.

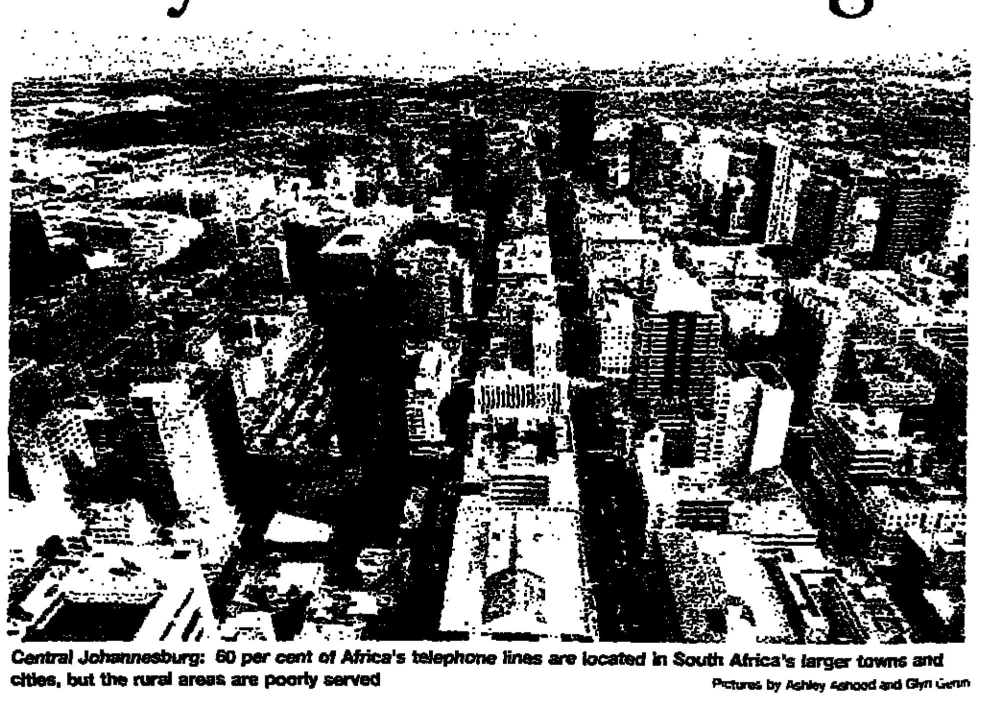
The legacy of the apartheid system on telecommunications is all too apparent to the majority of the population, and to the African National Congress which took office at the head of the government of national unity in May 1994. According to official estimates, there is less than one telephone per 100 black people, compared to about 60 lines per 100 whites. Narrowing that gap, without inhibiting the critical role of the industry in assisting South Africa's re-entry into the world economic community, is just one of the sometimes conflicting challenges facing the government.

Pallo Jordan, the Minister of Posts, Telecommunications and Broadcasting, is acutely aware of the need to redress what he describes as "the scandalous denial of access to modern telecommunications to millions of our people". He is also well aware of the international telecommunications companies waiting outside his door in the hope of securing a foothold in the South African industry, either through supply contracts or, better, through an equity stake in Telkom, the state monopoly.

In July, Mr Jordan launched a three-month consultation process with the publication of a green paper which addressed more than 150 primary questions to the public in general, and to those telecommunications users with a strong interest in the industry's future.

This process is running in parallel with the government's request for bids from companies to install over the next five years an additional 5m phone lines in the most deprived areas of the country at an expected cost of some R6bn (£1.05bn). There are currently 3.8m working lines in South Africa, and a backlog of some 120,000 applicants from the more affluent areas.

No contracts are likely to be awarded before the government has emerged from the consultation process with a



Central Johannesburg: 60 per cent of Africa's telephone lines are located in South Africa's larger towns and cities, but the rural areas are poorly served

Pictures by Ashley Ashwood and Glyn Genin

broadly agreed approach to future policy. The questions raised by the green paper cover the whole gamut of telecommunications operations, from ownership, investment and financing, to regulation, tariffs and international co-operation. The answers to many of them will impinge on the future of Telkom, and the role of the private sector.

The government does not like to use the word privatisation, except on the rare occasion when it wishes to refer to the complete sale of a state-owned asset. The explanation is primarily political and recognises the strong emotional reaction to the perceived consequences of privatisation. For many, British-style privatisation smacks of large-scale redundancies and the loss of opportunities for the state to advance employment prospects for the black majority.

Instead, the government prefers to talk about the restructuring of state assets. The debate is likely to be decided ultimately by the inability of the government to finance its ambitious programmes through its own resources.

President Nelson Mandela has warned several times this year that the government does not have "a pot of gold", and that one of its main targets must be to reduce the level of official debt and cut the budget deficit, currently running at an unacceptably high 5.8 per cent of gross domestic product.

Telkom is already anticipating the outcome of the debate.

President Nelson Mandela warns that the government does not have an unlimited "pot of gold"

It has embarked on its own programme of restructuring which could see the sale of some of its non-core support operations such as transport, construction, restaurants, security and workshops. This could reduce Telkom's 60,000-strong labour force by an estimated 14,000, bringing staffing levels more into line with comparable companies overseas. Partial agreement has been reached with the unions, but negotiations are expected to take several more months to complete.

However, the goal of greater efficiency at Telkom is unlikely to be encouraged by intensified competition in the domestic market. Mr Jordan acknowledged earlier this year that eventually Telkom would have to seek an equity partner, but he has since come out strongly against permitting the entry of the global giants.

"If we opened up the market now and allowed in, say AT&T or British Telecom, they would wipe us out within a week," he said. "I am not going to look at that route. It is subversive."

The suspicion voiced by Mr Jordan is that international interest in the South African market is limited to the more affluent areas of the country around Johannesburg, Pretoria and Cape Town, where most industry and business is situated.

"Telkom must first serve the needs of all South Africans, and not merely a privileged few as in the past," said Mr Jordan.

The most probable outcome is that initially the government will decide to offer international bidders the chance to acquire a 20 per cent stake in Telkom.

"Anything more than that would be unwise, not least because in a few years Telkom will be worth substantially more, and further equity stakes could be sold off at commensurately higher prices," says one official.

"But there is no question of full-scale privatisation at this stage. Whoever seeks a stake in Telkom must fully appreciate that the government has its own social and political goals, and be prepared to play a part in achieving them."

هكذا من الأصل

■ View from the top: by Dr Ron Sommer, chief executive of Deutsche Telecom

New alliances for a new era

'The transatlantic alliance between Deutsche Telekom, France Télécom and Sprint of the US, represents an important step towards the provision of comprehensive telecommunications services'

Telecommunications markets and the economic and regulatory factors surrounding them are in fundamental global transition. Their world is in the throes of a revolution, the extent and significance of which has yet to be determined in terms of economic, political and social consequences.

The times when work, land and capital were the only prerequisites for a successful national economy are long gone. "Information" is now taking on an importance no-one had ever dreamed of as the fourth factor of production. New markets are evolving with previously unseen speed.

Inextricably linked to this global development, is the end of the monopoly era. Very few companies will have adequate staff levels, technology and finance to handle the new market volume and the requirements of the specific target groups. Modern corporate strategy – decisions about options for the future – must hinge on elements such as internationalisation and the formation of alliances.

Deutsche Telekom AG must follow these lines in order to do justice to its economic significance for Germany and Europe as a whole. Its strategic alliance with France Télécom – and now with the US carrier, Sprint – represents a promising way of assuring its future as a global player in an ever intensifying competitive environment.

We are standing on the threshold of open competition. Deutsche Telekom will take all forms of competition seriously, whether domestic or international. Alliances such as Unisource, British Telecom/MCI or AT&T/McCaw are already showing the way towards globalisation. For this reason, Deutsche Telekom must reposition itself in many areas.

The repositioning is based on three main strategic objectives:

- Safeguarding key business activities.
- Opening up new markets for the future, such as multimedia.
- Internationalisation of the company's business activities.

In order to be able to face up to the new challenges effectively, several new structures were, and are, being considered. Decentralised, flexible, dynamic units are more important now than ever before.

To realise the necessary level of flexibility, the process of outsourcing complete business segments is being systematically pushed forward; furthermore, Deutsche Telekom is *forging links with highly competent business partners*, such as Intel and Microsoft.

Markets do not just need to be occupied geographically; they must also be penetrated with new, innovative and customer-orientated products. In this respect, the field of multimedia and the much talked about information highway play a key role. Home-shopping, home-banking, video-on-demand, telemedicine and other services, the visions of today, but the reality of tomorrow, will contribute to the expansion of Deutsche Telekom's market share.

By the end of this year, the first multimedia trials will be put into operation with video-on-demand services in Berlin. Deutsche Telekom will be building on already existing technology, which will then be adapted to the demands of the future. Capital-intensive rebuilding of the telecommunications infrastructures is not necessary in most cases.

Competition is no less powerful an agent for change than new media. It will mean flexible tariff structures: in future, prices will be linked to actual costs rather than to political preconceptions. A rebalancing of the tariff structures, as Deutsche Telekom is now

'New markets are evolving with previously unseen speed'

implementing, is therefore of great importance and, along with the 13 per cent price cut for business customers, represents one of the key points of the so-called tariff structure reform, which is to come into force on January 1 1996. On July 1 1996, Deutsche Telekom will then further reduce the tariffs by another 5 per cent, with the emphasis on international and long-distance calls.

It will also introduce new discounts and tariff options for customers with a large volume of telecommunications traffic.

Safeguarding the home market is just as important as the internationalisation of the company. However, they must both be achieved together. In its efforts to do this, Deutsche Telekom was quick in laying the foundations for successful international business operations. Numerous foreign representative offices were set up, for example, in Asia and the US, Russia and Britain.

Furthermore, we have proved our commitment to internationalisation through many joint ventures in countries such as Russia, the Ukraine, Hungary and Kazakhstan. Thus, Deutsche Telekom can use the comprehensive knowledge it gained in the "Development Programme for Eastern Germany" in the setting-up of modern telecommunications infrastructures and thereby also pave the way for a modern national economy.

The highlights will be the far-reaching co-operation with France Télécom and the global alliance with the US carrier, Sprint. Co-operation between France Télécom and Deutsche Telekom has been developing nicely for years, for example in the form of the common subsidiary company, Eunetcom.

Closely linked with this is the expansion of the trans-European networks, which will be the backbone of the European Union's telecommunications infrastructure. These networks provide the opportunity to push ahead with the further development of the common market.


Ron Sommer: 'Competition is a no less powerful an agent for change than new media. It also means flexible tariff structures' AP

Deutsche Telekom took part in the plans and projects from an early stage. Five carriers from Britain, France, Spain, Italy and Germany have come together to provide a Europe-wide common borderless transmission network under the umbrella of "GEN", the Global European Network.

'We stand on the threshold of open competition'

The transatlantic alliance between Deutsche Telekom, *France Télécom and Sprint* represents an important step towards the provision of comprehensive telecommunications services. However, there is one thing nobody must lose sight of: a global presence can only really be achieved by successfully conquering the fastest growing market in the world – the Asian-Pacific region – and by expanding the alliance to become a genuine global force through a competent, highly motivated partnership.

For reports on the German telecoms market and European developments: see pages 2 and 3 of this survey

■ Telecoms outsourcing contracts

Many variations on a theme

Users are in a strong position to negotiate fees, writes **Joia Shillingford**

Full telecoms outsourcing means handing over the company telecoms network – and the staff who run it – to a third party. But there are variations, such as swapping an in-house network for space on an externally managed network. It is also possible to contract-out the building of a new network, or the management of communications services like electronic mail.

Key drivers for telecoms outsourcing include:

■ **Core business focus:** companies are focusing more on their core businesses and less on extraneous services, such as telecoms. Gillette contracted out its network so it could concentrate on its consumer product lines rather than spend time and effort on international data networking.

■ **Cost-control:** companies contracting-out their networks usually agree to pay a fixed price for five years. This is easier to control than the escalating costs of an in-house network; or the high capital cost necessary to upgrade an existing network or build a new one.

In the UK, National Westminster Bank's £350m (£70m a year) outsourcing contract with BT enables it to transfer communications costs from its capital account to its current account, while introducing *improvements*.

■ **Growing complexity:** Networks are becoming more complex and companies realise they will need extra staff and up-to-date skills to upgrade. Rather than buy these in, some decide to contract out.

■ **Desire to interconnect local area networks:** many companies opt for outsourcing or managed data network services because they want to use new networking technologies, such as Frame Relay or SMDS (Switched Multi-Megabit Data Services to link local-area networks (Lans).

BT's first task *for* the Woolwich Building Society under its £30m-plus contract will be to use frame relay to connect Lans at 600 branches to the Society's national data centre.

■ **Competitive edge:** Mr Richard Fryer, BT Global Network Services marketing manager, says financial services companies can win a *competitive* advantage by moving to higher speed networks now. For example, if they could distribute information more quickly, they could upgrade services by enabling customers to get the same service at any branch as they would at their main one.

Definition

Opinions vary as to how fast the telecommunications outsourcing market is growing. This is partly a problem of definition. Some in the industry do not count the provision of managed network services (as in the Woolwich example) as full outsourcing; others exclude revenue from outsourcing contracts that the telecoms supplier would have received anyway.

John Lewis, marketing manager for BT's global services, puts growth at a conservative 15 per cent a year, although some parts of the market are growing up to twice as fast. Average contract values are also rising.

The Gartner Group, a research consultancy, says around 70 per cent of its European clients are considering outsourcing part or all their networks.

For those who take the plunge, telecoms outsourcing can bring a number of benefits. Chief among them are cost savings. Sue Uglow, co-author of a Gartner Group report on Enterprise Network Strategies, said: "Service prices for network outsourcing (another word for telecoms outsourcing) are negotiable.

"Gartner Group has seen discounts of up to 75 per cent based on the standard tariffs of the underlying services. Network management and other value-added services were added free of charge."

Cost-savings

Yet very large savings often lock users into long-term contracts of more than seven years. They contain implicit risks such as that the business relationship may sour, or the supplier fail to deliver.

Gartner Group advises users not to opt for the highest possible discounts but for the best combination of high discounts and low risk. However, it suggests that unless cost savings of over 30 per cent can be achieved, the potential risks of outsourcing outweigh the benefits. For example, telecoms outsourcing will not necessarily remove network problems: if anything it will increase the complexity of the network and the need for careful planning.

Moreover telecoms suppliers will not always give objective advice on how to run the network or cut costs. This is because one of their aims is to increase traffic over their networks.

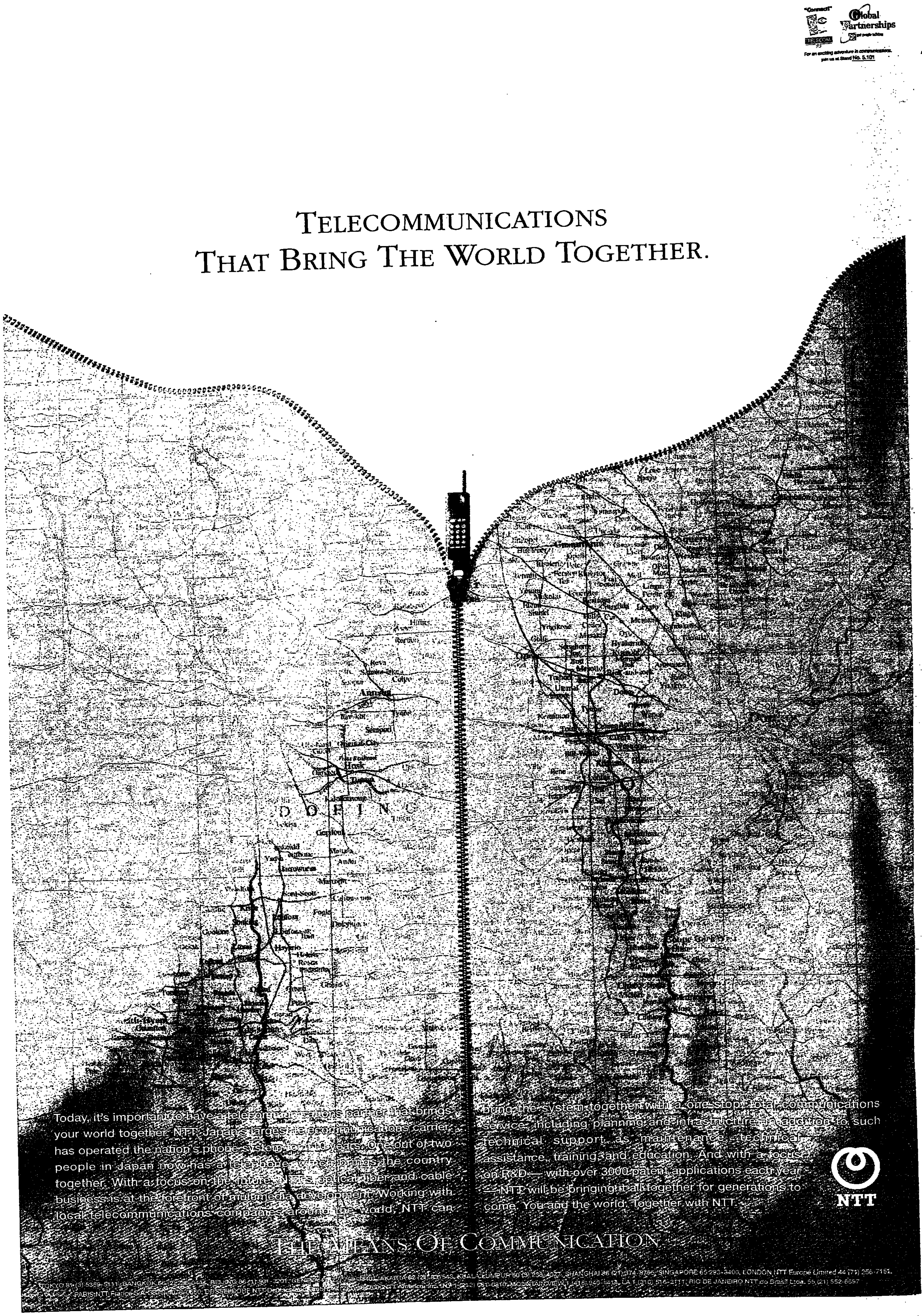
Nevertheless, users are in a strong position to negotiate in the run-up to the liberalisation of European telecoms in 1998. Monopoly telecoms operators are seeking new sources of revenue, which means there they are keen to offer outsourcing. Private operators, such as MFS, are setting up competing pan-European networks.

And, at Telecoms '95, telecoms equipment supplier Nortel (formerly Northern Telecom) will announce it has set up a telecoms outsourcing division.

A number of telecoms suppliers are also involved in alliances with other carriers as they vie for position in the market for international services.

Alliances include Concert - the BT-MCI joint venture, for which BT acts as a distributor in the UK; Uniworld – AT&T's alliance with Unisource (a consortium of Dutch, Swiss and Swedish telecoms operators); and Phoenix, a joint venture between Sprint of the US and Atlas (France Télécom and Deutsche Telecom).

Many of these alliances have yet to be approved. One exception is Concert. "Concert is perceived as having a head start over most of the others; it is definitely making a difference when bidding for business overseas," says Mr Lewis.



هكذا من الأصل